

**The Portable
Antiquities Scheme
and Roman Britain**
Tom Brindle

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The Portable Antiquities Scheme and Roman Britain

Tom Brindle

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Front cover: Enamelled Romano-British horse and rider
brooch from Lincolnshire, 2nd–3rd century AD, found by a
metal detector user and reported to the Portable Antiquities
Scheme (PAS ID LIN-A641C6)

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Chapter 1

Introduction

Introduction

The Portable Antiquities Scheme (PAS) is a project which encourages the voluntary reporting of archaeological artefacts discovered by members of the public in England and Wales, particularly metal detector users. Finds are reported to 38 regional Finds Liaison Officers (FLOs), who record artefacts onto a database (available at www.finds.org.uk), and this resource now holds records for over 800,000 archaeological objects, a figure which increases on a daily basis. Around 40 per cent of the artefacts recorded on the database are of Roman date, and the principal aim of this research has been to assess the contribution this resource can make to our understanding of Roman Britain.

The PAS was established in 1997 and since then increasing numbers of archaeological researchers have begun to utilize its data. Much of this research has been directed towards the study of individual finds of note or individual artefact types as part of typological studies (see for example Thomas 2003; Suzuki 2007; Kershaw 2008; and various papers in Worrell *et al.* 2010a). Much less attention has focused on the use of the PAS as a resource for exploring patterns of ancient settlement. Notable exceptions have included the use of PAS data for investigating the distribution of Iron Age settlement in Hampshire (Worrell 2007a); the exploration of early Anglo-Saxon settlement and burial in Norfolk (Chester-Kadwell 2009); a study into the potential of metal detector finds for investigating settlement and economy in Viking and Anglo-Saxon England (Naylor and Richards 2005; 2006a; 2006b; Richards *et al.* 2009); and a multi-period study into the landscape development of the Berkshire Downs (Sumnall and Levick 2010). Collins (2010) has recently considered the relationship between PAS data and Roman occupation on the northern frontier and Walton (2012) has used PAS data to explore Roman coin loss in Britain, whilst some aspects of the current work are also now in print (Brindle 2009; 2010; 2013). Generally, however, the value of PAS data for exploring Romano-British settlement remains relatively underexplored.

This chapter introduces PAS data as an archaeological resource. It aims to briefly establish the ways through which artefacts are recovered and reported, as well as assessing the main strengths and limitations of the data. We shall see how the PAS database comprises unsystematically gathered finds, predominantly reported by metal detector users, and how the archaeological researcher has very limited control over the content or quality of the data. The finds are usually unstratified, and are thus divorced from their original archaeological context, presenting clear difficulties for archaeological interpretation. These issues represent two of the major problems associated with the use of metal detector finds for archaeological research, and a principal objective of this work has been to establish the extent to which they limit the data's potential for reliable interpretation. In order to fully explore the effectiveness of Roman period PAS data as an archaeological resource, a further objective has been to establish a suitable methodology for using the data to explore some particular aspects of Romano-British settlement, with specific attention directed towards the study of Romano-British landscapes and site characterization. These themes are discussed in more detail in Chapter 2.

PAS Annual Report year	Metal detecting	Chance find while metal detecting	Fieldwalking (unsystematic)	Other chance find	Controlled archaeological excavation	Building or agricultural work	Total
2007	80.51%	3.93%	10.87%	4.02%	0.20%	0.47%	100.00%
2006	69.06%	7.78%	18.01%	4.37%	0.08%	0.69%	100.00%
2005–6	61.54%	6.48%	25.07%	4.17%	0.25%	2.49%	100.00%
2004–5	69.60%	9.08%	10.78%	8.70%	1.66%	0.18%	100.00%
Total	71.12%	6.39%	16.13%	4.95%	0.44%	0.98%	100.00%

Table 1 Method of discovery for artefacts recorded on the PAS database shown as percentages, based on statistics from four PAS Annual Reports (Portable Antiquities Scheme 2005; 2006; 2007; 2009)

Chapter 3 considers the characteristics of PAS data in more detail, discusses the principal issues with working with a haphazardly gathered archaeological resource and presents the methodology developed to explore the above objectives. The chapter considers how some of the issues associated with PAS data are analogous to those associated with other archaeological resources, particularly data from archaeological fieldwalking projects, and establishes some perspectives for exploiting the data most effectively. The methodology is then applied to five regional case studies, presented in Chapters 4–8.

In each of these case studies the data are explored through two broad methods of analysis: a macro-study of the geographical distribution of PAS data at a regional level and micro-studies of small areas. The analyses of the distributions of PAS data aim to explore the extent to which physical geographical features and human influences on the landscape affect their availability. Other issues which may have an impact on the availability of data, such as the historical relationship between archaeologists and metal detectorists, are also considered. In each case study the distribution of PAS data is compared with data available from other archaeological sources, and the data from the relevant Historic Environment Records (HERs) and the National Monuments Record (NMR) provide the most effective datasets for comparison. Comparison of PAS data with these other types of archaeological data present a useful way of assessing how representative both datasets are of

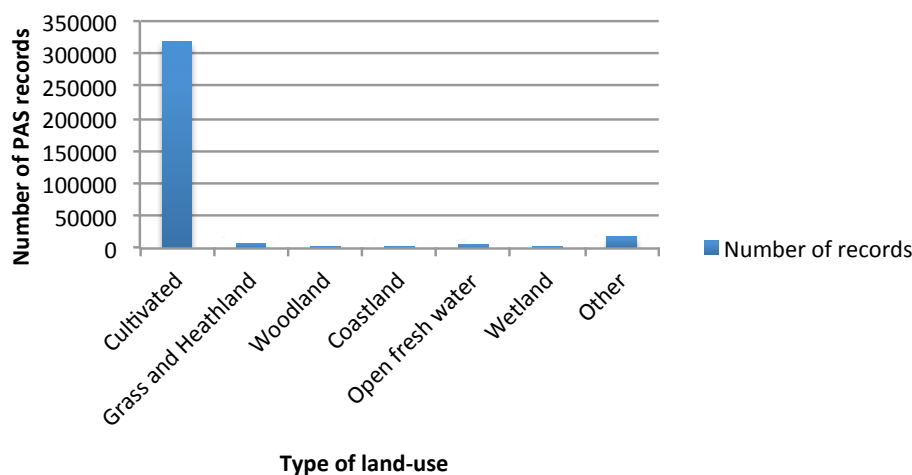
Romano-British settlement and for exploring the extent to which PAS data can contribute to the understanding of the Roman period in individual regions. In order, the five case study chapters focus on Wiltshire, Worcestershire and Warwickshire (as one regional case study), Northamptonshire, North and North East Lincolnshire and Cumbria (the reasons behind the selection of these case studies are considered below and in Chapter 3, pp. 27–9).

Finally, in Chapter 9, the results from each regional case study chapter are brought together so that regional patterns and variation can be identified. This concluding chapter presents an overview of the main outcomes of the analyses, as well as indicating areas which would benefit from future research.

An overview of Roman period PAS data

Roman finds account for approximately 40 per cent of all artefacts recorded on the PAS database. The total number of Roman finds available increases daily, but a dataset downloaded on 4th June 2009 included 160,447 Roman records of a total of 383,673 records from all periods. The large quantity of Roman finds available for study makes this a very significant archaeological resource. The database includes artefacts found across England and Wales, and the widespread geographical availability of the data is one of their principal strengths, presenting opportunities for using artefacts to explore and compare patterns of Romano-British settlement and artefact use in different parts of

Figure 1 Landuse for PAS records created between 1998 and 2012 (where landuse is recorded)



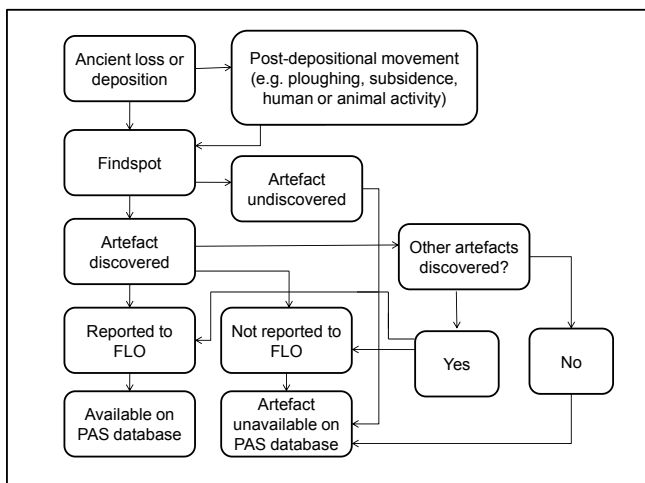


Figure 2 Principal processes affecting objects on the PAS database between their original deposition and their availability as records on the database

Roman Britain. However, there are some important characteristics of the data which need to be understood if they are to be used effectively.

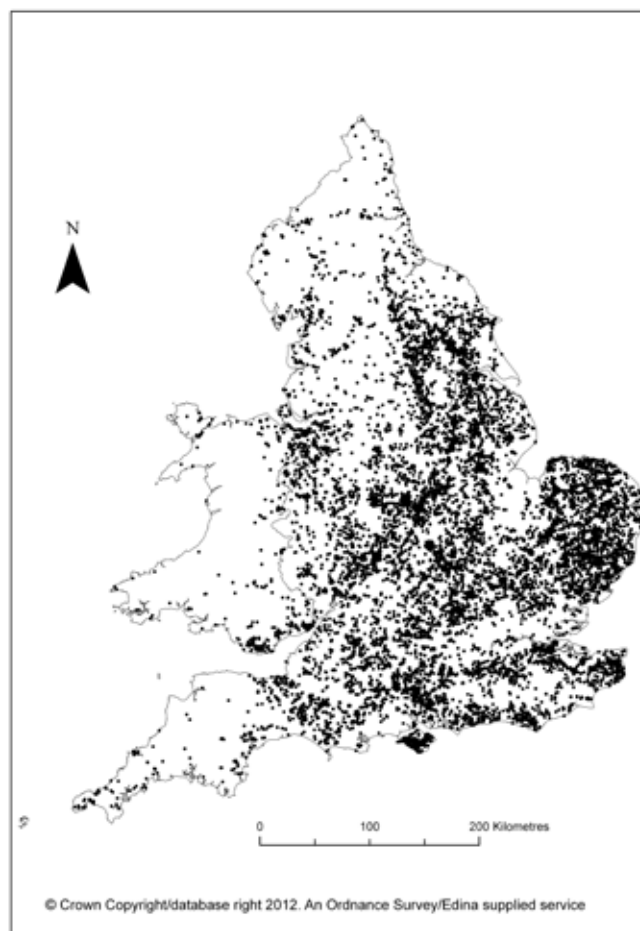
One of the most important attributes of the data are the circumstances through which they are gathered, and it is in this that they differ most significantly from the majority of other archaeological resources. The PAS database almost entirely comprises records of artefacts which are haphazardly discovered and reported by members of the public, primarily metal detector users (**Table 1**).¹ The unsystematic methods used during the recovery of artefacts represents one of the principal challenges for interpreting PAS data, as it can be difficult to assess the extent to which different approaches by individuals during the recovery and reporting process may affect the data available for study. This has been explored through a questionnaire which was circulated to metal detector users to gain an understanding of the variable choices and methods employed by individuals during searching and reporting. This questionnaire and its results are presented in Appendices 1 and 2, but the results are incorporated in Chapter 3 as they had an important influence on the development of the methodology.

The haphazard methods employed during the recovery and reporting of finds to the PAS exacerbates the problem caused by the fact that most objects are recovered from cultivated land, and are therefore usually unstratified artefacts with no archaeological context (**Fig. 1**). Together, these two issues present potentially serious difficulties for interpreting PAS data, as the processes which intervene between the ancient deposition or loss of an artefact and its availability on the PAS database may differ significantly between records (**Fig. 2**). A third issue concerns variation in the level of precision with which findspots for artefacts are recorded. A small minority have very limited spatial information provided at all, and are sometimes only provided with the name of a parish or a four figure grid reference. On the other hand, some finders utilize GPS devices and provide full grid references, and 85.7 per cent of the findspots are recorded to a six figure grid reference or better (based upon finds recorded on the PAS database between 1998 and 2009). However, the variation in findspot precision has a significant

effect on spatial analysis. Furthermore, as the researcher using PAS data cannot usually verify the accuracy of the findspots associated with the records, this necessitates a certain amount of caution when making interpretative judgements. Of additional importance is the variable quality of the descriptions of finds on the PAS database. Methods and standards for recording finds have developed over time and there has been a gradual improvement in the quality of the records. Consequently, the most recent records tend to be considerably better than those recorded early in the Scheme's history. Many early records lack images and some of the descriptions of Roman artefacts provide only basic chronological information and limited details of the finds, limiting their interpretative value.

As **Figure 3** shows, the Roman finds recorded on the PAS database are not evenly distributed geographically. The distribution is skewed towards central, southern and eastern England, with fewer finds from the South West and North of England and Wales. **Figure 4** plots the distribution of PAS data of all other periods, and the similarity between the two distributions suggests that this may in large part be a product of factors which affect the recovery of artefacts. Land use is probably the single most important factor affecting the distribution of finds, and there is a clear association between areas well represented by PAS data and the amount of arable land (**Figs 5–6**). The factors which influence the distribution of PAS data have been explored in detail by Katherine Robbins in her recent doctoral research (Robbins 2012).

Figure 3 National distribution of Roman PAS data



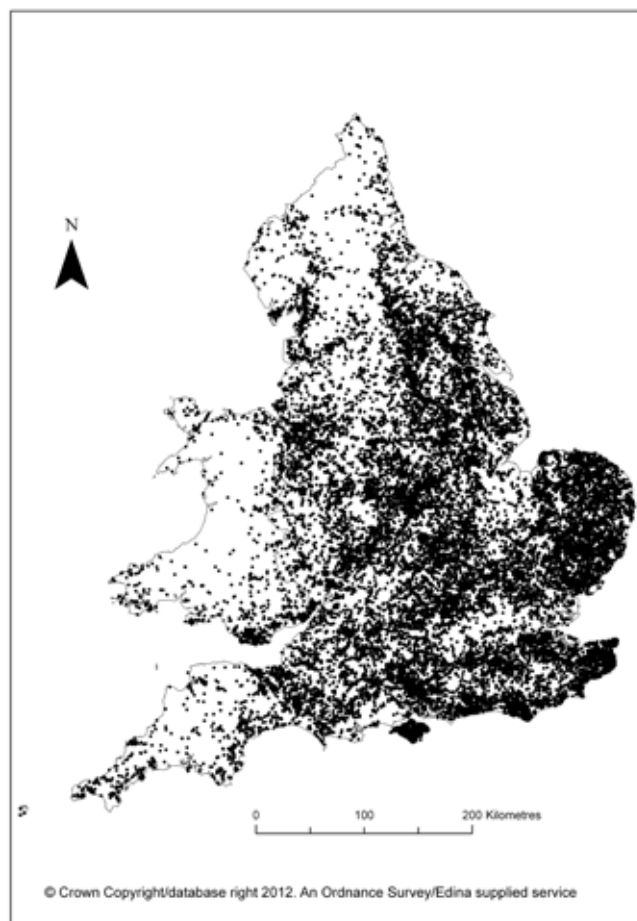


Figure 4 National distribution of all non-Roman PAS data

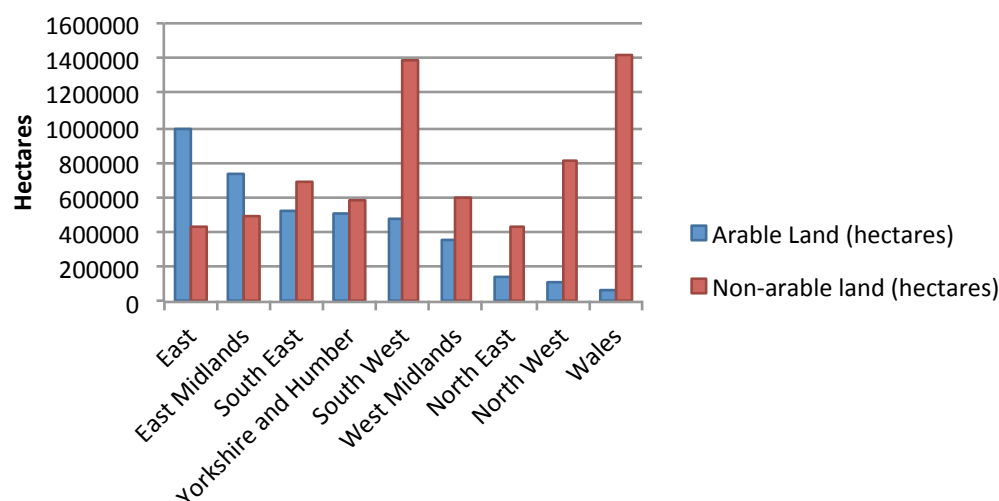
A further factor which may affect the distribution of finds is the historical relationship between archaeologists and detector users (Dobinson and Denison 1995; Thomas and Stone 2009; Thomas 2010). In some areas archaeologists strove to engage with metal detector users in a positive way when the hobby was emerging and in these areas there has been a greater tradition of trust and cooperation than in areas where archaeologists have only sought to foster better relationships more recently. The PAS was established in different parts of the country at different times (see **Table 2** for an overview of its development), and areas which were

represented by an initial pilot phase and a first period of expansion of the PAS tended to be those in which there had been close liaison with metal detector users in the past.

Richards *et al.* (2009) have shown how the areas with the greatest densities of PAS data tend to correspond with the regions which saw the earliest phases of the PAS. There is also a clear link between the regional variability in the relationship between archaeologists and detector users and the differences in land use and physical geography. It is not surprising that regions which have the greatest amount of land available for searching are those which saw early efforts by archaeologists to encourage detectorists to report their finds, as it is in these areas where both the negative effects of detecting and the potential archaeological benefits of recording metal detector finds were most prominent.

Whilst land use and the historical relationship between archaeologists and detector users appear to have a considerable influence upon the availability of PAS data, comparison with the general distribution of other archaeological evidence suggests that the distribution may also reflect patterns of ancient settlement to a certain extent. Indeed, a contrast between Romano-British settlement in the ‘highland’ north and west and ‘lowland’ south and east has long been noted (Haverfield 1912, 24; Fox 1943; Sargent 2002). To explore this it is useful to compare Roman period PAS data with Holbrook and Morton’s investigation into the distribution of archaeological interventions which recovered Roman evidence in England, which also revealed a general distribution favouring the south and east (Holbrook and Morton 2008). It is important to note that as most archaeological interventions occur during the planning process, this distribution will largely reflect a greater rate of development in these areas. However, the imbalance towards the south and east in both the Roman PAS and archaeological intervention data might suggest that the uneven distributions also reflect regional variation in population density or different levels of access to, as well as different attitudes towards, the acquisition of portable material culture by communities in different parts of Britain in the Roman period (Hingley 1989, 161; Taylor 2001b, 56). Establishing where variation in the distribution of PAS data

Figure 5 Regional differences in the availability of arable land. Figures are based on the June Agricultural Survey 2007. Figures from Wales were only available for 1999 (DEFRA 2009)



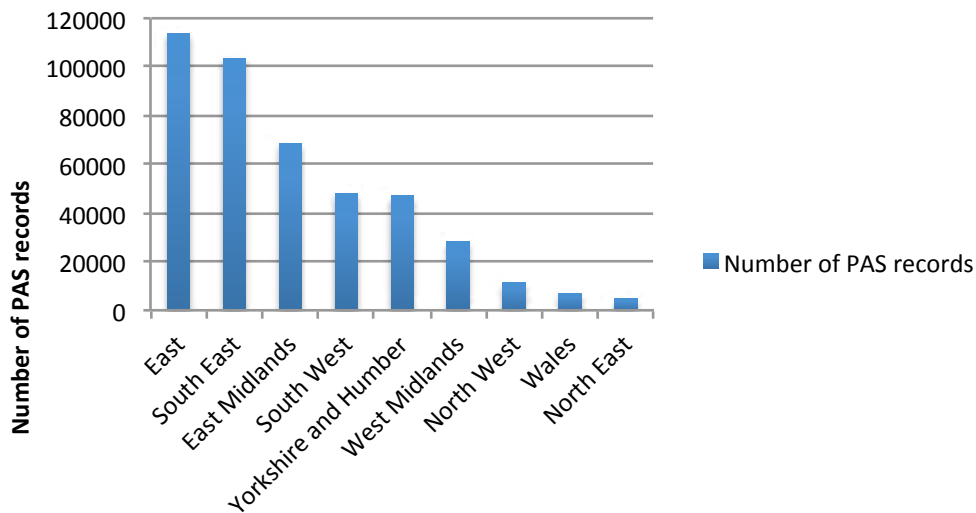


Figure 6 Number of PAS records by region between 1998 and 2012 (excluding 52,812 coin records from Wales recorded by the Iron Age and Roman Coins from Wales project and not originally recorded by PAS)

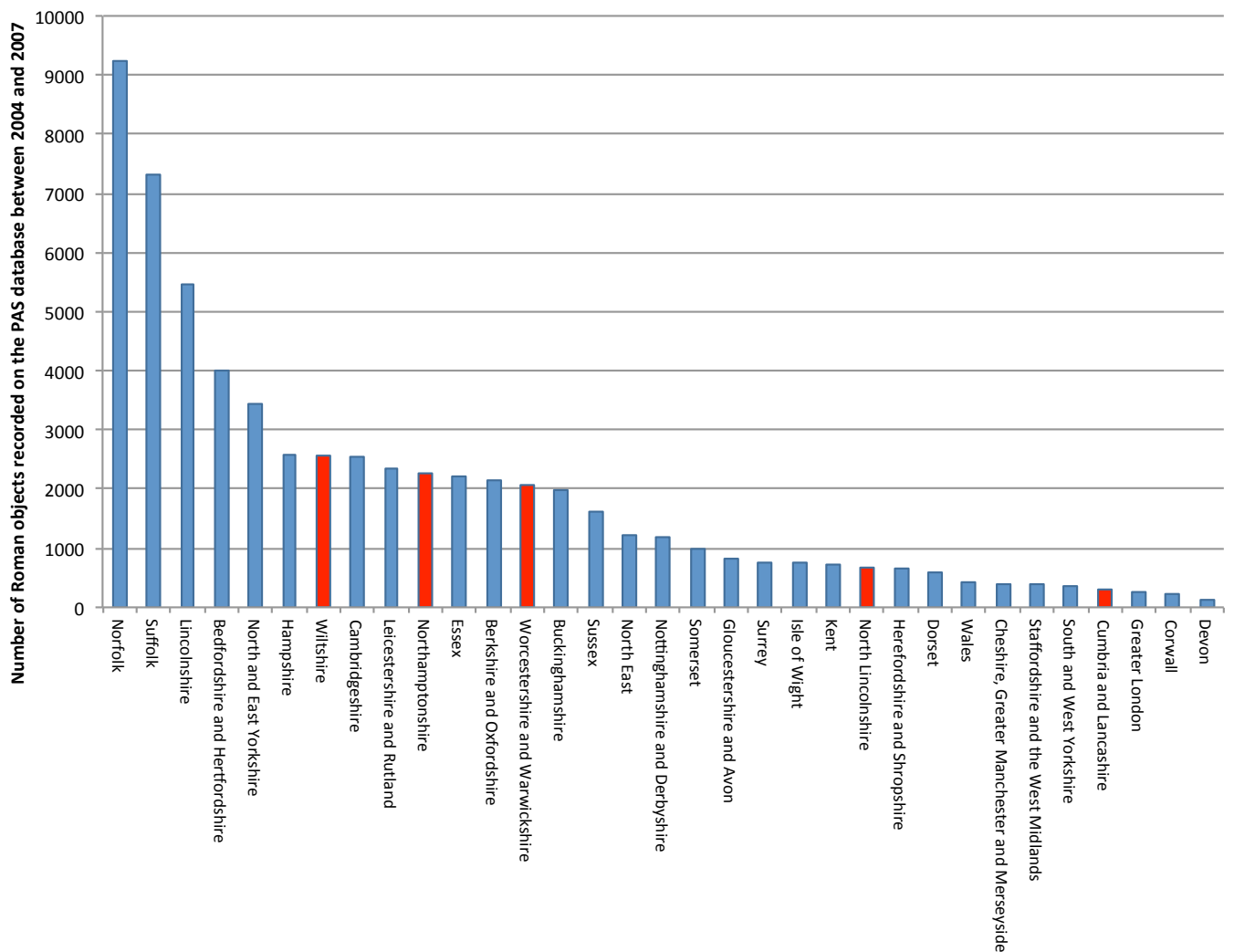


Figure 7 Selection of case study areas (shown in red) in relation to quantities of Roman objects from other counties recorded on the PAS database between 2004 and 2007 (data from Worrell 2005; 2006; 2007b; 2008)

1996	Publication of Portable Antiquities. A Discussion Document (Department of National Heritage 1996)	This government discussion document recognized that urgent action needed to be taken to deal with the large volume of archaeological objects which were not covered by the terms of the Treasure Act that were being recovered but not recorded in England and Wales
1997	Treasure Act replaced Treasure Trove	Legal requirement for objects of potential Treasure to be reported to coroner within 14 days of realizing the find may qualify as Treasure. The definition of Treasure includes single objects of silver or gold over 300 years old, hoards of two or more coins of silver or gold found together, hoards of ten or more base metal coins found together and all objects found in association with finds of Treasure
1997	Pilot phase of Portable Antiquities Scheme in six areas	Kent, Norfolk, North Lincolnshire, the North West, the West Midlands and Yorkshire
1999	Expansion of pilot Portable Antiquities Scheme to five further areas	Dorset and Somerset, Hampshire, Northamptonshire, Suffolk and Wales
2003	Treasure Act amended following first Review of Treasure Act	Finds of Treasure now include hoards of prehistoric base metals
2003	Portable Antiquities Scheme expanded to cover all of England and Wales with funding from Heritage Lottery Funding	36 regional Finds Liaison Officers now cover all of England and Wales with funding from Heritage Lottery Fund (from 2003 to 2006). Project is managed by Museums, Libraries & Archives Council (MLA)
2006	DCMS continues funding	Government continues funding for PAS as a ring-fenced grant to MLA
2008	MLA considers future of PAS	Government cuts funding to MLA as from 1 April. MLA considers future of Scheme and passes cuts onto PAS (two posts lost); public campaign to reverse cuts. MLA commissions review of Scheme and funding settlement agreed with DCMS and BM for 2009 to 2011 with cuts reversed
2009	Coroners & Justice Act 2009 contains amendments to Treasure Act	These amendments include provision for a single Coroner for Treasure, the extension of the obligation to report Treasure to anyone who comes into possession of it, and the power for the Secretary of State to designate officers (Finds Liaison Officers) to whom Treasure should be reported. Implementation planned for 2014
2009	Headley Trust grant	Headley Trust gives £144K over 3 years to fund interns for PAS. Funding reviewed for further two years in 2012
2010	General election	Incoming Coalition Government carries out Spending Review and merges MLA into Arts Council. Management of PAS transferred to BM as from 1 April 2011 and 4-year funding settlement contains 15% reduction. The new government reviews Coroners & Justice Act and decides not to implement the changes to the Treasure Act
2010	Sale of Roman helmet found by metal detectorist in Cumbria by Christie's for £2m raises pressure for further Review of Treasure Act (which was due in 2007) and implementation of changes in Coroners and Justice Act	Government declines to implement Coroner for Treasure and other amendments to Treasure Act, but announces intention of holding review in 2011
2011	Research funding	£150K grant from Leverhulme Trust to carry out 3-year study of the factors underlying data recorded by PAS
2012	Further research funding	£650K grant from AHRC to carry out 3-year study of Roman coin hoards
2012	Britain's Secret Treasures	ITV screens 6-part series on PAS in July; average viewing figures of 3.5million. A second series commissioned for 2013
2013	Treasure Act Review	Treasure Act review finally starts, with assistance of Treasure team at British Museum

Table 2 Major developments in the history of the Portable Antiquities Scheme and the Treasure Act (Bland 2005; 2009; Roger Bland pers. comm.)

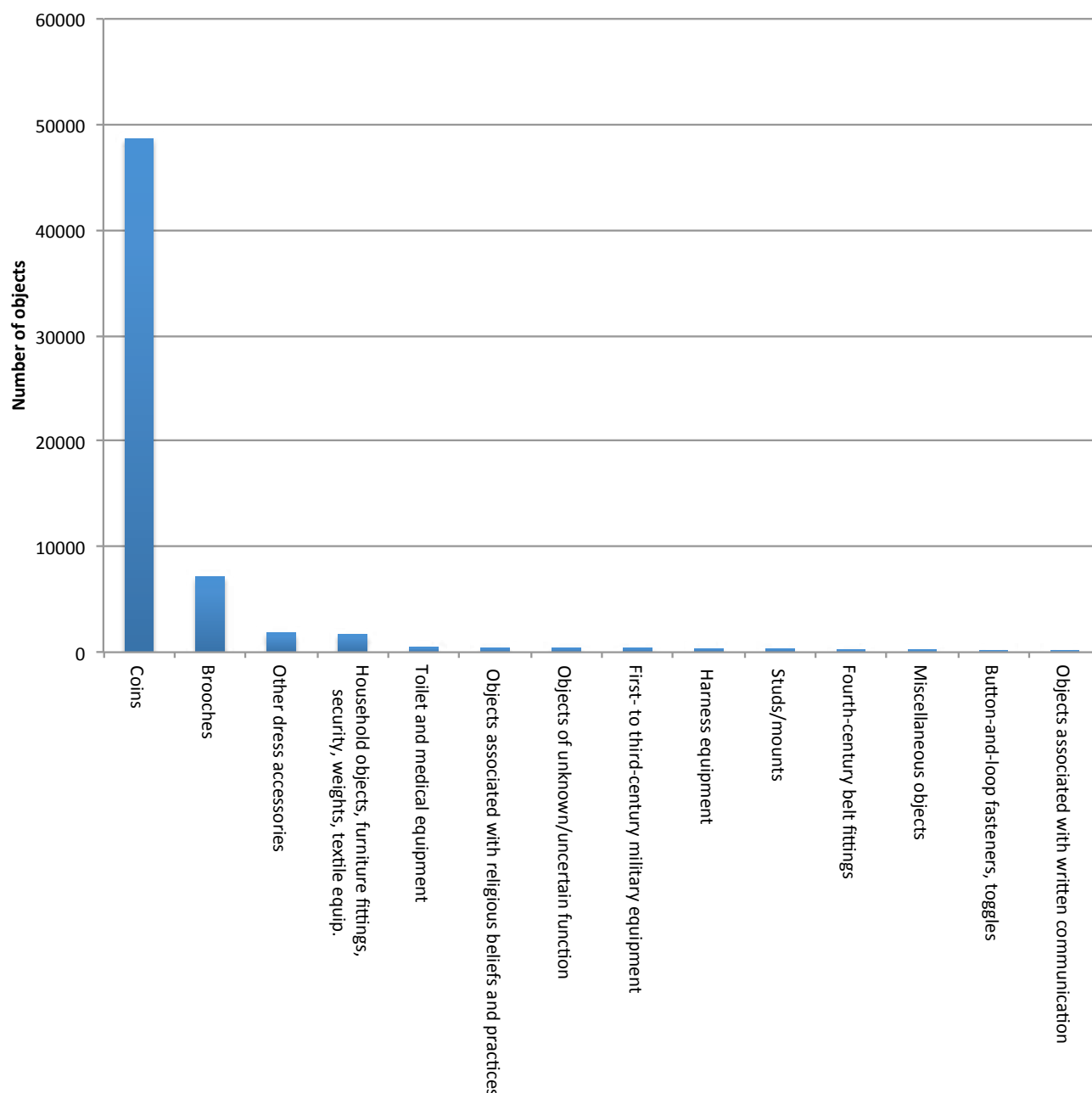


Figure 8 Functional categories of non-ceramic artefacts recorded on PAS database between 2004 and 2008 (after Worrell 2005; 2006; 2007b; 2008; 2009)

reflects distinctive characteristics in the settlement pattern, as opposed to differences caused by modern recovery processes, is one of the principal challenges of interpreting the data, and forms an important component of the case studies in this work.

The regional variation in the availability of PAS data has had an important impact on the choice of case studies selected for detailed analysis. It was considered important for the areas selected to have sufficient Roman period data available to allow detailed interpretation to take place, whilst not containing such vast quantities so as to make completion of several case studies unfeasible.

For this reason, case studies were predominantly selected from regions which produced medium quantities of Roman finds (**Fig. 7**). However, it was also considered important to include a case study from at least one region where data are less well represented, so that the discussion of the potential

value of PAS data was not entirely biased towards areas where Roman data are abundant. However, the quantity of data available has not been the only criterion behind the choice of regional case studies and further reasons for their selection are presented in Chapter 3 (pp. 27–9).

As we have seen, most finds reported to the PAS are reported by metal detector users, and this influences the types of Roman object available for study on the PAS database. Predictably, metal artefacts are most common, making up around 76 per cent of the Roman finds reported each year (based on Roman finds recorded on the database between 2005 and 2008 (Worrell 2006; 2007b; 2008; 2009)). Worrell's summaries of the non-ceramic objects reported to the PAS show how coins are by far the most common metal artefacts reported, followed by brooches, whilst other artefact types are generally represented by a small number of examples (**Fig. 8**). As discussed above, the numbers of

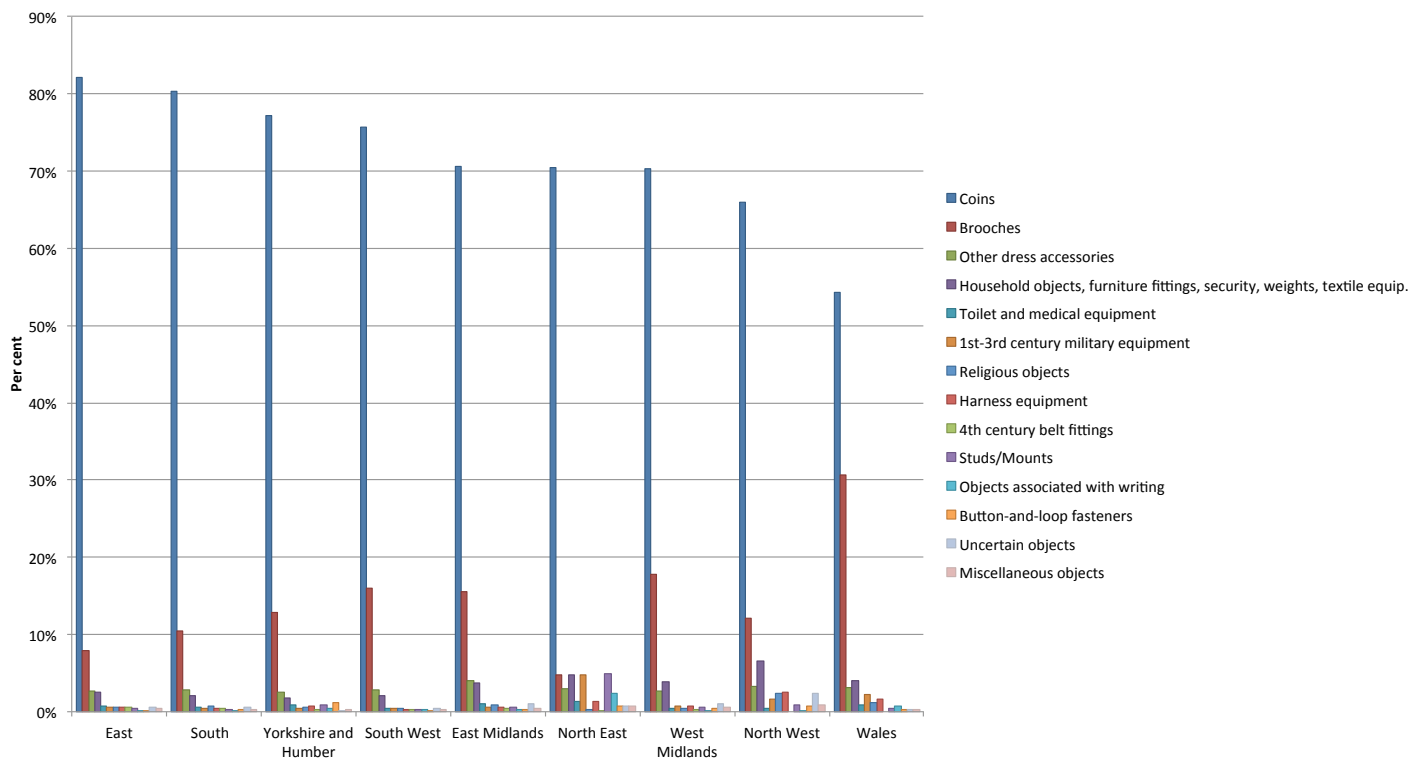


Figure 9 Proportions of functional groups of artefacts recorded by PAS between 2004 and 2008 by region (after Worrell 2005; 2006; 2007b; 2008; 2009)

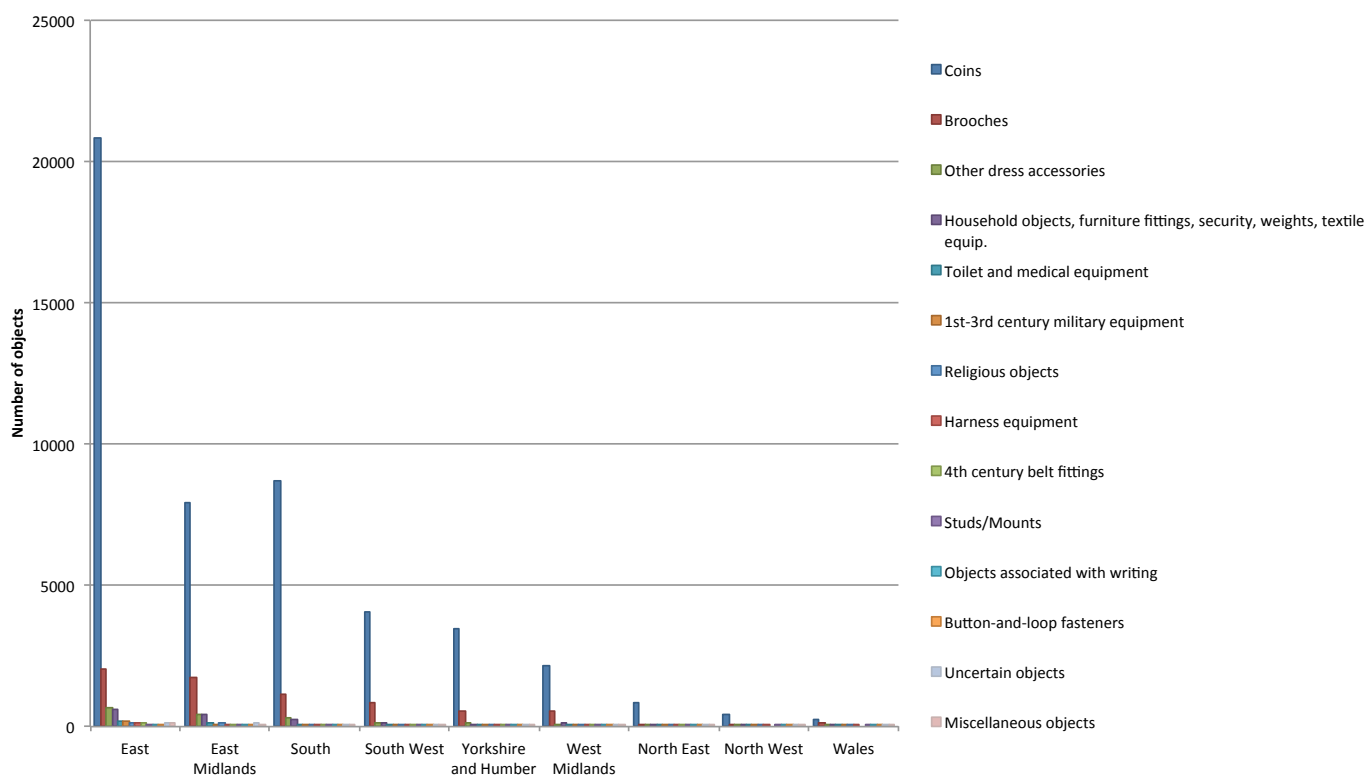


Figure 10 Numbers of functional groups of artefacts recorded by PAS between 2004 and 2008 by region (after Worrell 2005; 2006; 2007b; 2008; 2009)

Roman artefacts recorded on the PAS database vary by region, as do the relative proportions of finds of different functional categories (**Fig. 9**). Wales, for example, has a much greater proportion of brooches reported than other counties, whereas the North East and North West are proportionately better represented by a wider range of functional artefact types than some other regions. However, it is important to note that these areas are in general poorly represented by data, and the slightly higher proportions of some non-coin artefact types in Wales, the North East and North West may reflect lower levels of coin use in these areas, and the actual numbers of these artefacts are still very low compared to regions such as the East or East Midlands (**Fig. 10**).

Roman coins and, to a lesser extent, brooches are often closely datable and their abundant representation in the PAS database suggests that the data have potential for providing chronological information about Romano-British settlement. Coinage in particular is amenable to statistical methods of analysis developed by scholars such as Richard Reece (1991; 1995; 2002), John Casey (1988), Sam Moorhead (2001b; 2001a) and Philippa Walton (2012). As well as providing dating evidence for individual sites, such techniques provide ways of exploring differences and similarities between sites based upon their patterns of coin loss, and in some cases this can contribute to characterizations of sites and of their roles within the local Romano-British settlement pattern. The occurrence of other functional objects on the PAS database is undoubtedly of potential use for typological studies of individual artefact types, but their relative infrequency arguably diminishes their potential for the systematic characterization of sites in the way that some excavated assemblages have been studied (King 1984; Cool and Baxter 1995; 1999; 2002). These themes are considered in more detail in Chapter 2, where recent approaches to the study of some aspects of Romano-British settlement are discussed.

The above discussion has provided an overview of the Roman period data available on the PAS database. It has sought to present the data's principal strengths and limitations and has enabled recognition of a number of questions that must be considered when seeking to interpret the data. These can be divided into two groups. The first concerns the data themselves, and are the questions that one must ask to ensure that any potential interpretations of the data are valid:

- To what extent do the processes which intervene between the deposition of artefacts and their recording on the PAS database affect our ability to interpret them?

- To what extent do conditions affecting artefact recovery bias the distribution of finds?
- What effect does the variability in quality of records on the PAS database have on its effectiveness as an archaeological resource?

These questions have been of particular importance during the development of the methodology adopted in this work, and the archaeological interpretations made throughout the book have been developed with these questions in mind.

The second group of questions are closely related, as it is not possible to answer them without reference to those above. They are more directly concerned with the study of Roman Britain, and are themes which have been identified as areas where PAS data have potential for enhancing understanding of Romano-British settlement in the case study regions in which analysis has been undertaken.

- What does the distribution of PAS data say about similarities and variation in the density and chronology of regional Romano-British settlement patterns?
- Can PAS data be used to enhance understanding of the chronological development of individual Romano-British sites and landscapes?
- How do sites represented by PAS data relate to the known Romano-British settlement pattern in their surroundings?
- To what extent can PAS data be used to characterize Romano-British settlements based upon their finds assemblages?

These questions have been informed by the following discussion in Chapter 2, where some research themes are considered, in particular the study of Romano-British landscapes and the characterization of sites through artefact assemblages.

Notes

- 1 Metal detecting is a popular hobby in England and Wales, where it is legal so long as finders report objects which fall under the terms of the Treasure Act (1996) and do not search without permission or on areas that are legally protected as Scheduled Monuments or Sites of Scientific Interest. The Portable Antiquities Scheme was established in 1997 after a government discussion document recognized that thousands of non-Treasure objects were being recovered every year by detector users, but few were being reported to museums (Department of National Heritage 1996). The history of the Portable Antiquities Scheme and the Treasure Act and the relationship between metal detector users and archaeologists have been given much attention in print, and the reader is referred to works by Addyman (2009), Addyman and Brodie (2002), Austin (2009), Bland (2005; 2009) and Thomas and Stone (2009). See **Table 2** on p. 6 for a brief overview of the development of the PAS.

Chapter 2

The Potential Applications of PAS Data

Romano-British Landscapes and Site Characterization

Introduction

Chapter 1 has introduced PAS data as an archaeological resource, identifying their principal strengths and limitations. Particular advantages include the quantity of data available and the extensive geographical coverage of the dataset, as well as the chronological information that some object classes can provide. The purpose of this chapter is to provide an archaeological context within which to analyse this new resource, allowing consideration of some ways in which PAS data can contribute to some current themes in the study of Roman Britain.

There are a number of ways PAS data can contribute to the study of Roman Britain. One method, and the way in which the data have most often been used so far, is in the study of individual artefact types. Recent examples of this approach include studies of coins (Walton 2012; Bland and Loriot 2010); a study into the distribution of Roman seal boxes (Andrews 2008); a survey of Roman religious objects recorded by the PAS (Sutton and Worrell 2007); and a study of Romano-British finger rings (Daubney 2010). These studies have made significant contributions to our understanding of these particular artefact types, and it might seem that work on individual types of objects represents the most logical use of a database which includes thousands of records of Roman finds. Yet the data also have considerable potential when viewed collectively and there are other approaches to the study of Roman Britain to which they may be applied successfully, which have received limited attention until now.

Over recent years studies of Romano-British ‘landscapes’, usually characterized by a focus towards patterns of settlement over a defined geographical area as opposed to the study of individual sites, have become more common. In addition, our understanding of rural settlement in Roman Britain has been transformed by the various archaeological investigations that fall within the blanket term ‘landscape archaeology’. The extensive geographical availability of PAS data means that they may have potential for contributing to landscape-focused studies at both the macro and micro scale, allowing the exploration of regional and local patterns of Romano-British landscape use.

A second area of research where PAS data have potential to contribute is in ‘site characterization’, the study of the chronological, functional, economic, socio-political and religious roles of sites within a society based on site morphology or artefact, faunal and environmental assemblages. The following discussion will show how PAS data are more limited in this respect than in their potential application to landscape archaeology, but, nonetheless, some valuable insights may be gained by investigating the nature of finds assemblages recorded by the PAS.

This chapter is divided into two sections and is focused on the above themes. As the data demonstrably have more potential for use in a landscape-based approach, this section is presented first and the chapter is weighted towards this theme. A section on the data’s potential as a resource for characterizing Romano-British sites follows.

PAS data and the study of Romano-British landscapes

The study of landscapes has increasingly been adopted by Roman archaeologists over the past 40 years. This has been

the result of a combination of factors. Firstly, technological advances in methods of reconnaissance since the Second World War, aerial photography in particular, have produced evidence indicating that much of Britain was much more densely populated in the Roman period than had previously been realized. Rescue excavations ahead of increased urban development, road construction and aggregate extraction have also led to a vast increase in known Roman sites, and in some parts of the country extensive fieldwalking surveys have also contributed significantly (see for example Hall and Coles 1994). The wealth of evidence generated by these techniques has resulted in the recognition that much of Britain was an open and extensively occupied landscape, and that patterns of Roman rural settlement were complex and regionally very variable. It is also now evident that early estimates of the number of Roman rural settlements (for example, Collingwood and Myres 1936, 180; Frere 1967, 311) significantly underestimated the density of settlement in many parts of Britain (Taylor 1983, 83–4; Jones 1996, 13–14). These realizations have heralded an era of dissatisfaction with the way that traditional approaches to the study of Roman Britain favoured individual sites over broader patterns of settlement and were overwhelmingly biased towards urban, military and villa sites, to the detriment of our understanding of low-status rural settlements. The increased evidence available for the variability in the character and density of Roman rural settlement has resulted in increased efforts to redress this imbalance. Important and influential works have included, amongst others, a study into the layout and social organization of rural settlements and buildings (Hingley 1989); a characterization of the geographical variation in rural settlement form and land use (Taylor 2007); and a major national study of the excavated evidence for the Romano-British countryside is currently underway (Smith 2013).

These projects have capitalized on the wealth of new evidence generated by excavation, aerial photography and fieldwalking. The PAS database represents an additional landscape resource, and because the data are dominated by finds predominantly recovered from agricultural fields (see pp. 2–3, **Fig. 1**), they have the potential to complement considerably our evidence from aerial photography, excavation and fieldwalking survey.

However, there are clear limitations to the data, and the nature of the resource dictates that it is not suited to provide evidence for the ancient environment or for food production or consumption, areas best served by environmental evidence recovered during excavation. Neither do PAS data provide evidence for settlement morphology in the same way as the results from aerial photography, excavation or geophysical survey, though they may occasionally be able to contribute to the understanding of the spatial extent of sites. One of the major strengths of the data, however, is their wide geographical scope and amenability to different levels of analysis. The data can be approached from a macro-regional perspective, where their distribution can contribute to discussions of broad patterns of land use. Alternatively (or additionally, as they have been used here), the data can be considered at a micro level, where they can be used to explore Romano-British activity in the landscape

surrounding individual sites. Let us first consider the potential for using PAS data at a macro scale, as a regional landscape resource.

A number of regional surveys have explored broad distributions of Romano-British settlement and land use. In the Solway Plain in Cumbria, for example, Bewley (1994) focused on aerial photographic evidence, combining it with environmental data, to explore how the landscape was exploited during the prehistoric and Roman periods, including the impact of the army on the native population. Bewley suggests that ancient settlement was largely governed by the quality of the land, with settlement patterns weighted towards lighter soils (Bewley 1994, 65). Whilst one of the difficulties with using aerial photographic evidence is that the formation of cropmarks is dependent on the right geological conditions, Bewley has suggested that the distribution of cropmarks in the Solway Plain reflects the ancient settlement pattern rather than differential cropmark production (Bewley 1994, 84). Elsewhere, fieldwalking surveys in areas not represented by cropmarks in the Foulness Valley of East Yorkshire also suggested that the preponderance of cropmarks on the better drained soils reflected a genuine settlement pattern (Halkon 2008, 154). However, in north-west Essex, a fieldwalking survey has suggested that settlement extended onto the poorly drained land at least as early as the Iron Age, something that would not have been revealed if the aerial photographic evidence had been considered in isolation (Williamson 1984, 226).

Many regional analyses of the distribution of ancient settlement are based largely on aerial photographic evidence, yet the above examples demonstrate the need to include other sources of evidence. Taylor's national survey of the evidence for Romano-British rural settlement in England has demonstrated how the availability of archaeological evidence from different sources is regionally very variable, and aerial photographic evidence is heavily biased towards areas with permeable geologies, such as gravel and sands, a point frequently noted (Jones and Evans 1975, 1; Riley 1982). As the surveys undertaken by Williamson, Halkon and others have shown, one of the great benefits of the data gathered through archaeological field survey is that in some areas they are able to provide evidence for settlement in areas with geologies not susceptible to the formation of crop and soilmarks (Taylor 2007, 49). This may provide additional evidence for settlement, as in north-west Essex, or may confirm areas that were apparently devoid of settlement. PAS data also have this potential, and can be used to augment the pattern of settlement revealed by other archaeological reconnaissance techniques and excavation. It is, however, important to remember that metal detector finds are chiefly derived from arable land (Chapter 1, pp. 2–3, **Fig. 1**). As it is also primarily arable land from which aerial photographic evidence is available, it is unlikely that PAS data will present large quantities of new data for broad areas lacking in aerial photographic evidence because they are under pasture. Nonetheless, PAS data may provide evidence for small pockets of arable land on non-permeable geologies that have not provided evidence from aerial reconnaissance and which have not seen extensive excavation.

A major concern of landscape archaeology has been the concept of 'off-site archaeology' (Haselgrove *et al.* 1985; Bintliff 2000b). Essentially, this concerns activities within the landscape that occur beyond the focus of habitation. Often evidence comes from aerial photography, where there is visual evidence for field systems, but further evidence is derived from surface scatters of finds which are often seen as evidence for domestic waste spread on arable fields as manure. The methodological implications that off-site archaeology have for the utilization of PAS data are discussed in Chapter 3, but it is clear that not all finds reported to the PAS will necessarily derive from settlement foci, and some will undoubtedly relate to land use in the areas surrounding settlement. At a broad, regional level, such data nonetheless provide general indicators of Romano-British activity.

Although some PAS finds must relate to off-site processes, within the broad distribution of PAS data it is possible to identify discrete clusters of artefacts that may relate directly to settlement (discussed in detail in Chapter 3, pp. 23–6). This raises the possibility of utilizing PAS data to reconsider the density of settlement in particular areas. This, in turn, could contribute to current questions concerning population numbers in Roman Britain (Chapter 9, pp. 126–7), which have often been estimated based upon rural site densities derived from fieldwalking surveys, aerial photography and excavation (Millett 1990, 181–6; Potter and Johns 1992, 67–8; Mattingly 2006, 368).

Whilst PAS data arguably have potential for identifying previously unrecorded areas of land use and settlement, there is also scope for utilising them to provide additional information for sites and regions for which there is already good knowledge. A limitation of aerial photographic evidence is that there is often a lack of precise chronological information associated with sites known from cropmarks and soilmarks. Whilst some work has been done on the dating of aerial photographic evidence based on site morphology (Bewley 1994), the approach suffers from the fact that some settlement forms see use in multiple periods. Extensive field survey has provided valuable dating evidence for sites known from aerial photographs in areas such as the Fenlands (Hall and Coles 1994), and one potential use of PAS data is to provide chronological information for sites where this is lacking.

Whilst recognizing the limitations of using haphazardly collected data (discussed in detail in Chapter 3), it may be possible to move beyond the use of PAS data as a tool for site recognition and as a chronological indicator, and to use the resource to explore some of the themes in Roman rural settlement that have recently been highlighted as requiring attention (Taylor 2001b). Can, for example, differences in the composition of groups of PAS finds be used to characterize sites and thus enable discussion of socio-economic relationships between sites in a landscape? The use of PAS data for the characterization of archaeological sites is discussed in more detail later in this chapter (pp. 13–14).

Some of the most important archaeological investigations of Romano-British landscapes undertaken to date have explored the relationship between individual sites and their immediate environs (see for example Gaffney and Tingle

1989 and Neal 1989 for important studies of the landscapes of villas). Where PAS data are available from the vicinity of known settlements it is worth exploring how they can contribute to our understanding of these sites. This is perhaps of particular use given the large numbers of villas that have been investigated, but where analysis of their surrounding landscapes has usually been limited. For example, can the general distribution of PAS data within a locale inform us about the possible extent of agricultural activity associated with known settlements? Where settlements are identified through PAS data is it possible that they form part of the estate of other sites known through archaeology?

PAS finds recovered from the vicinity of villas and other rural settlements may also provide evidence for differing patterns of material consumption, and how settlements engaged with the Roman monetary economy. There have been recent questions concerning the assumptions that have traditionally been made regarding the role and the status of settlements based on structural evidence (Taylor 2001b, 56). Some large villas, for example, have patterns of coin use that are similar to some 'small towns', but some appear to have differed little from what are usually considered to be lower status farmsteads (Taylor 2001b, 56). On the other hand, there are examples where apparently low-status farmsteads have proven to be far 'richer' than expected (Taylor 2001b, 56). PAS data gathered from the vicinity of sites known from excavation or aerial photography may contribute to this discussion, presenting the opportunity to compare the use of portable material culture from sites at a local level, and across different regions.

Sites identified through PAS data may also contribute to discussions concerning the use of space within Romano-British landscapes. As PAS data do not provide structural evidence they are unsuited to investigations of the layout of particular buildings within settlements, but exploration of the distribution of finds over wider areas might aid our understanding of spatial patterns of settlements in relation to natural topography, hydrology and the position of major Roman roads. In East Yorkshire, for example, there is evidence for settlement shift during the early Roman period (Halkon 2008, 208–9), and the layout of Roman roads has been seen as having a profound impact on the organization of settlement in the region (Millett 2006, 306–7). Chronological information from sites identified through PAS data may allow exploration of the relationships between rural settlements, roads and urban centres in other parts of the province.

Recently there has been increased discussion of the need to dissolve conceptual boundaries between 'rural' and 'urban' sites, as towns and settlements within their hinterlands had complex symbiotic relationships, with both being integral components of their landscape (Willis 2007). The division between the two is at its most indistinct at many of the poorly defined 'small towns' of Roman Britain, which often appear to have acted as local market centres for the rural settlements in their surrounding landscapes (though many also appear to have had specialized religious or industrial roles (Burnham and Wachter 1990, 5)). Many of these small towns have yet to be subject to detailed

investigation and the most basic aspects of morphology and chronology of many of them is still open to question. Where PAS data occur on or in close proximity to these sites it is possible that the resource can provide useful information regarding the extent of extramural settlement, particularly given that most work at such sites has traditionally tended to focus on the walled areas of the towns (Corney 2000, 38; Willis 2007, 144–5).

Important work in the hinterlands of towns such as Wroxeter (White and Van Leusen 1997; Gaffney and White 2007), Silchester (Fulford and Timby 2000) and Verulamium (Hunn 1992) has demonstrated what can be gained by considering the landscape surrounding towns. If PAS data can be used to identify previously unrecorded sites and add new information to those already known from urban hinterlands then there is potential for exploring the density of settlement surrounding these centres. Where PAS data can provide dating evidence it may be possible to investigate change and continuity in settlement patterns from the late Iron Age and into the Roman period, contributing to current concerns regarding changes in rural society that may have resulted in the development of the new urban centres (Taylor 2001b, 58).

In the north of England and in Wales, where much archaeological endeavour has been directed towards investigations of military sites, many of the surrounding settlements have been neglected. Recent geophysical surveys of *vici* at sites such as Birdoswald and Maryport have revealed that some of these settlements were far more extensive than previously thought (Biggins and Taylor 2004; Sommer 2006). At other military sites, however, where evidence from aerial photography and geophysics is lacking, less is often known about the extent of *vici*, and there are still questions concerning the layout of these sites in different areas (Sommer 2006, 132). Whilst PAS data are usually available in lower quantities in the north than in some parts of the south, there is perhaps potential for using the data to help characterize *vici* and sites in their environs and to explore the interrelationships between them (James 2001; Sommer 2006, 132).

The contribution of PAS data to the study of Romano-British site characterization and chronology

A major trend in the study of Romano-British settlement over the past two decades has been an increased concern to move beyond descriptive approaches towards the evidence. Part of this has involved a number of attempts to explore how different social, political, economic and religious identities manifest themselves in archaeologically visible ways through the adoption of particular building styles, consumption of particular foods and the use of particular pottery types, artefacts and Roman coinage. This is based on the concept that particular social practices, or ‘ways of doing things’, will result in distinctive patterns in the consumption and deposition of material culture, and consequently, ought to be visible in the archaeological record (Gardner 2007, 128).

The vast quantity of evidence for plans of Romano-British settlement now available through aerial photography and excavation has led to attempts at using settlement

morphology to explore aspects of chronology, function and the social organization of Romano-British sites (cf. Bewley 1994; Smith 1978a; 1998; Hingley 1989; 1991). Artefacts and ecofacts are also now widely used for site characterization and pottery assemblages have been used by a number of scholars to explore socio-economic relationships and differences between sites (Millett 1979; 1983a; Willis 1998; Evans 2001; Pitts 2004; 2005a; 2005b; 2007). Similar approaches have also been adopted in the study of other materials such as glass (Cool and Baxter 1999) and by specialists in environmental archaeology, particularly animal bones (King 1991; 1999; 2005; Dobney 2001). King, for example has investigated consumption patterns for meat, identifying distinct trends between military, rural, urban and temple sites (King 1984; 1999; 2005). Plant remains from Romano-British sites have also begun to be viewed in similar ways in recent years (Van der Veen *et al.* 2007; 2008; Van der Veen 2008).

As PAS data are so heavily biased towards metal objects, they are not suited to the study of pottery, glass or environmental assemblages. However, small finds and coinage have also been used for purposes of site characterization, and these are of much more direct relevance to PAS data. Recent work by Cool and Baxter (1995; 2002), for example, has demonstrated how the functional composition of assemblages of small finds can be used to differentiate between sites, especially through the use of multivariate statistical techniques such as Correspondence Analysis. Other, artefact-specific investigations into the relationship between certain types of finds and types of site have also been undertaken. Investigating the ‘social context’ of lighting equipment, Eckardt was able to demonstrate how oil-burning lamps were associated with ‘Roman’ contexts such as military sites and towns (Eckardt 2002; 2005). A similar approach towards Romano-British nail cleaners revealed that they were generally associated with ‘native’ small towns and rural sites (Crummy and Eckardt 2003; Eckardt 2005). Particular types of brooch are sometimes associated with sites of a certain function. Aucissa brooches have often been suggested to have had close associations with the military, although they are also known to have occurred widely on non-military sites (Eckardt 2005, 150–1). Horse and rider brooches have a strong association with ritual sites (Ferris 1986; Eckardt 2005), as has been suggested for brooches depicting horses in general (Bayley and Butcher 2004, 174). The social context within which other artefacts of a particular type are recovered can therefore help provide a suggestion as to the character of a site, although it would be wise to exercise caution when characterizing a site based upon this evidence alone.

Coins have also been used as an indicator of site type by scholars such as John Casey and Richard Reece, who advocated numerical analysis of coins from Romano-British sites, recognizing that coins as site finds are at their most useful when considered as entire assemblages and compared with assemblages from other sites (Casey 1988). Reece’s methodology for comparing patterns of coin loss at different sites has been adopted and adapted by many subsequent workers (for example Moorhead 2001b; 2001a; Walton 2010;

2012), some of whom have developed further statistical techniques for analysing large quantities of coins from different sites (Lockyear 2000; 2007). There have also been recent efforts to apply such methods to the analysis of PAS data (Walton 2010; 2012). The importance of such methods is the potential they offer to use patterns of coin loss to explore differences and similarities between sites, providing chronological evidence for occupation at a site as well as assisting in site characterization through comparison of coin profiles with sites that have a known function.

Of the methods used for site characterization discussed above, the approaches towards small finds and coinage have the most potential for application to PAS data (the method developed by Reece is presented in more detail in Chapter 3 (pp. 26–7), as it has been adopted in some of the micro-level case studies). However, experiments at an early stage of this research suggested that the application of statistical techniques such as Correspondence Analysis is of limited value when applied to assemblages of PAS finds. This is because the majority of findspots represented by PAS data are dominated by Roman coinage, and the small finds assemblages are rarely varied enough to produce statistically meaningful results. Where numbers of artefacts occur in large quantities this is often enough in itself to suggest that a findspot is unusual in some way (though this may be a result of recovery processes and need not necessarily be an archaeological factor, a theme discussed in more detail in the following chapter). Comparison of groups of finds from PAS findspots with assemblages from other published sites within a region may allow some suggestion as to site function, and the occurrence of types of artefact with implied religious or social associations may also be of use, for example in the recognition of sites with a possible ritual function. Even where groups of finds appear not to contain artefacts associated with specific functional activities, where spatial resolution permits, the distribution of artefacts may perhaps allow consideration of the extent of settlement. This may allow differentiation between sites of single farmstead type and more extensive, nucleated settlements. At the very least it may be possible to suggest the broad chronological development of sites.

In this regard, the investigation of coin profiles is arguably of greater benefit than the small finds. The analysis of coin assemblages arguably has potential for investigating landscapes populated by PAS data, where other means of dating and characterizing sites are limited. For example, where PAS data are available from sites known through

aerial photography, can the coin profiles be compared with those from other sites to provide more evidence for site characterization? Are there chronological differences or similarities in the coin profiles of sites which may suggest periods of settlement aggregation or dispersal in relation to developments at nearby towns or villas? And to what extent do the compositions of assemblages at different sites allow a nuanced settlement hierarchy to be established?

Conclusions

The purpose of this chapter has been to explore two areas within the study of Roman Britain where PAS data have the potential to contribute. The first section focused on a ‘landscape’ approach towards Romano-British rural settlement, followed by a consideration of some of the ways in which PAS data may be used to help characterize and date Romano-British settlements. In summary, there are a number of clear areas where PAS data have potential for enhancing current understanding of Romano-British settlement. General distribution patterns of ancient land use and settlement can be explored by investigating the geographical distribution of PAS data at regional levels. PAS data may be of particular use in areas poorly represented by aerial photographic evidence and extensive excavation. Where PAS data occur in conjunction with evidence from aerial photographs there is potential application for the chronological information that PAS data may provide. Moving beyond this, new sites identified through PAS data have the potential to contribute to current discussions of the density of Romano-British settlement in particular areas, which may in turn contribute to considerations of population numbers in Roman Britain. The PAS data also have the potential to contribute to current concerns regarding activity in the areas of possible villa estates, in the hinterland of small towns as well as in the surrounding landscapes of forts and *vici*; all areas that have historically been neglected, but where recent work has demonstrated value. Groups of artefacts recovered from individual findspots may be useful for site characterization, particularly where artefacts associated with specific functions are reported. Coin assemblages provide the best evidence for chronology and may also provide some information about site character. The following chapter presents some methodological approaches towards utilizing PAS data to explore these themes, undertaken through a set of regional case studies discussed in Chapters 4–8.

Chapter 3

Methodology

Introduction

The principal aim of this research has been to assess the archaeological potential of PAS data as a resource for enhancing understanding of the Roman period. This has been done through the exploration of some themes in the study of Roman Britain, and by considering how the processes which affect PAS data before they become available affect their interpretative value. I have explored these questions through five regional case studies. In each case study a broad overview of Roman PAS data assesses their general availability and distribution as well as calculating the total number of potential Romano-British sites they represent. The chief repositories for archaeological information in the United Kingdom are county-based Historic Environment Records (HERs), and comparison with the distribution of HER data allows assessment of the number of new Romano-British sites recorded by the PAS, as well as those for which enhanced information has been provided for sites that are already known. This method enables an assessment of the value of Roman PAS data to be undertaken for each individual case study, as well as facilitating interregional evaluation of the data through comparison of regional statistics. The micro-regional analyses undertaken in each case study aim to explore the potential that Roman period PAS data have for providing detailed information on individual sites or landscapes. The in-depth analyses undertaken in these micro-regions provide scope for interpreting potential sites in relation to local patterns of Romano-British settlement, and for assessing the potential the data have for characterizing sites and for providing information about their chronological development. This chapter presents the methodological approach adopted in these two levels of analysis. Before the individual levels of analysis are considered in detail the methodological issues associated with analysing and interpreting PAS data are discussed. Finally, once the methodological approaches towards the macro and micro levels of analysis have been presented, the five case study regions are introduced, along with the reasons for their selection.

PAS data as an archaeological resource

The processes that objects recorded by the PAS undergo between their original use and their availability as records on the database have been introduced in Chapter 1 (pp. 3–9) and are considered in further detail in this chapter. We have seen how most finds are reported by metal detector users, and how the majority are recovered from arable land. As an archaeological resource the PAS data therefore have much in common with data gathered during archaeological fieldwalking, a technique which also relies on the collection of material from the surface of ploughed fields. As a result, the methodology presented in this chapter owes much to the methodological approaches towards surface scatter assemblages discussed in the archaeological fieldwalking literature. However, the haphazard method of recovery for finds on the PAS database differs significantly from the rigorous methodological standards applied to most archaeological fieldwalking surveys (cf. Haselgrove *et al.* 1985), and whilst there are clear similarities between the two types of data there are also major differences. The difficulties associated with interpreting artefacts gathered

through systematic archaeological surface surveys have been discussed at length in the fieldwalking literature (Haselgrove *et al.* 1985; van Leusen 2002), yet the complications of utilizing data gathered in an entirely unsystematic way require specific consideration.

One of the difficulties with interpreting the data is that many of the processes affecting their distribution and recovery are unknown. Firstly, artefacts may have been lost or deposited in the past for a wide range of reasons and as a result of a multitude of different activities. In studying the data it is primarily these ancient processes that we, as archaeologists, are attempting to understand. However, in a second stage, most artefacts recorded on the PAS database have been removed from their original archaeological contexts between their original loss and their point of discovery through a range of post-depositional actions (discussed in detail on pp. 17–18). Such processes blur our picture of the past, decreasing the confidence with which we can argue for the occurrence of particular activities. The next stage through which the researcher is removed from activities in the past is the point at which an artefact is recovered. A wide range of factors affect what finders of archaeological material collect and report, and the limited information available about the circumstances through which much of the data on the PAS database are recovered places yet another barrier between the researcher and activities in the past. The picture becomes yet murkier at the point of entry onto the PAS database. Decisions made over what to record and the potential for errors when entering the records presents a further level of removal for the researcher. The next three sections discuss these issues in detail, before the methodology adopted in the case studies is discussed on pp. 21–9.

The ancient loss or deposition of artefacts

It is now accepted by most archaeologists that the loss and deposition of artefacts in the past could occur well beyond the limits of individual occupation sites (Bintliff 2000a, 2; Terrenato 2000). Wide distributions of ceramics, for example, are often seen as a result of the use of domestic waste as manure to increase soil fertility in the past (Foard 1978, 363; Bintliff and Snodgrass 1988, 508). This has raised questions about the appropriateness of using such finds as a means for identifying distinct settlements.

However, the majority of finds on the PAS database are metal artefacts, and it is questionable whether these finds should be considered in precisely the same way as ceramic evidence. Seeing the distribution of metal artefacts in plough soil in relation to manure scatters would rest on the assumption that metal artefacts were routinely discarded as rubbish. However, excavations at Romano-British sites do not routinely find large numbers of copper-alloy artefacts associated with middens, and such finds are often recovered from other areas of sites, often suggesting casual loss (Leech *et al.* 1981; Maull and Masters 2005) (though in some cases artefacts may have been deposited as part of ritual activity as discussed below). Certainly, metal artefacts must have sometimes ended up on rubbish dumps (or in other locations where rubbish could be deposited such as pits and ditches), but it seems likely that in many cases broken items of bronze

would either be repaired or recycled rather than discarded. Changes in the metallic composition of later brooches indicate that recycled scrap was an important metal source at least in the late Roman period (Bayley and Butcher 2004, 27). Repaired brooches are well known, generally where the pin or spring has been repaired or replaced (Bayley and Butcher 2004, 34), and there are a number of examples of repaired brooches on the PAS database (see for examples PAS database references YORYM-BBFE46; GLO-75D717; LANCUM-EFD064). Coinage may have been swept up with household waste and entered middens in this way and 3 of the 78 coins from a Romano-British rural settlement at Bradley Hill, for example, were recovered from a midden (Leech *et al.* 1981, 192). However, it is probably fair to assume that money was generally not deliberately discarded as rubbish, although it could have been deliberately discarded for other reasons discussed below. Arguably then, although some metal artefacts must have occasionally been discarded as waste, and thus may have entered the archaeological record as part of a manure scatter, distributions of metalwork should not routinely be viewed in such a way.

Metal artefacts sometimes account for large proportions of finds discovered on Roman sites, exemplified by the large groups of metalwork recovered from excavations at sites such as Colchester (Crummey 1983) and Catterick (Wilson 2002), and it is clear that some groups of metal artefacts relate to permanent settlement. However, metal finds may also represent casual losses some distance from the nearest settlement, as people moved around and performed activities within a landscape. A brooch pin breaks, for instance, or becomes unclashed as its owner walks along a track or works in a field; a horse pendant falls off as a rider canters along. Where artefacts such as military fittings are discovered in the vicinity of Roman roads these are sometimes seen as more likely to relate to traffic than to military settlement (Millett 2006, 305). This explanation is likely to account for some finds of single artefacts, and the presence of small numbers of metal artefacts need not necessarily relate to settlement in the immediate vicinity.

Artefacts could also be deposited outside the immediate limits of settlement along with the burial of the dead, and particularly in urban contexts extramural cemeteries were common (Jones 2004, 182). Brooches, hair pins and other dress accessories were sometimes included adorning the deceased, and could also occur deposited as a group in a box or bag as grave goods (Croom 2004, 289). Cremation was a more prevalent burial rite than inhumation during the first two centuries AD, and the cremated remains of individuals were often placed in receptacles and buried along with the remains of any artefacts that may have accompanied them on the funeral pyre (Jones and Mattingly 1990, 300). Burnt objects recovered from the cremation cemetery at Beckfoot in Cumbria serve as examples of this (Caruana 2004) (see also Chapter 8, pp. 111–12). Surface finds of metalwork could therefore potentially indicate the presence of individual burials, cremations or cemeteries. Examples of metallic surface finds interpreted as such include possible box fittings from a likely cremation burial in Suffolk (Portable Antiquities Scheme 2003, 25) and numerous burnt artefacts from the vicinity of the Beckfoot cremation cemetery in

Cumbria (Caruana 2004; Portable Antiquities Scheme 2006, 47).

A further possibility for deposition of artefacts in an area removed from habitation is that the finds were deposited as part of a hoard. The term is used here as a group of artefacts deposited with the intention of recovery, as opposed to artefacts deposited together for ritual or symbolic purposes (Bradley 2009). Ritual and symbolic possibilities for deposition are discussed below, although, as Johns (1996, 9–11) has pointed out, the distinction between these activities and hoarding is not clear cut, and some artefacts interpreted as ritual or votive deposits may also have concerned the safe keeping of wealth in religious settings. Hoards are often made up entirely of coinage, although others which include mixed coinage and other artefacts are also well known (Johns 1996, 3–4). The problems with attempting to interpret the reasons for the deposition of a hoard have been widely discussed, but it is clear that not all hoards need necessarily be associated with periods of strife in Britain, and burial of a hoard could be undertaken for many reasons (cf. Johns 1996; Reece 1988; 2002, 67–88). Whilst hoards are known from on-site contexts (for example, a late 3rd-century AD hoard from a house in *Verulamium* (Mattingly 1971)), they were also deposited in the area surrounding major settlements (such as a hoard from near Silchester (Fulford *et al.* 1989) and could sometimes be buried some distance away from the nearest settlement (Johns 1996, 8).

The ritual deposition of coinage and metalwork is a practice also known to have occurred during the prehistoric and Roman periods. Ritual deposition could occur on settlements at formal shrines and temples, and Romano-British temples were often foci for votive offerings of coinage and other artefacts (Smith 2001; Woodward 1992, 67–80). In addition to formal shrines and temples, the ritual deposition of artefacts could also occur in other parts of a settlement. For example, Woodward and Woodward (2004) have suggested that shafts containing likely ritual deposits dug in the centre of urban settlements may have been associated with a foundation ritual. Ritual deposition could also occur within a settlement in private settings and Fulford (2001) has drawn attention to the wide range of ritual depositions that could occur in private domestic contexts. Beyond the limits of domestic settlement, ritual activity could also occur at dedicated ritual sites, and rural temples are sometimes located in isolated locations such as hilltops and near streams (Woodward 1992, 19). The votive deposition of material in watery contexts such as lakes and rivers is well attested (Fulford 2001, 199), although Johns (1996) has warned against interpreting all collections of material recovered from wet locations as necessarily votive. Some may have been hidden with the intention of recovery, whereas some may have been lost through accident (Johns 1996, 11–12). The deliberate deposition of artefacts as part of religious practice is therefore likely to account for some artefacts recovered from the ploughsoil, yet these may not necessarily relate to activity in an area of habitation.

Whilst discussing ritual deposition, it is worth considering whether metal artefacts could have been deliberately introduced to fields away from settlements. It has, for example, sometimes been argued that medieval

pilgrims' badges, a common find by metal detector users on ploughed fields, were buried in garden plots and arable land to deter insects, vermin and weeds (Spencer 1998, 18). Could some of the Roman coins, brooches and other metal artefacts found by metal detector users on arable fields in fact relate to such a practice in the Roman period? A wide variety of artefacts are certainly known to have been used as votive offerings at Romano-Celtic shrines (Woodward 1992, 66–80) (cf. Cold Kitchen Hill in Wiltshire (Robinson 2001, 158–9) and Coventina's Well, Northumberland (Allason-Jones and McKay 1985)). Perhaps artefacts may have been discarded on fields as part of Evans' suggestion that ceramics were deposited in fields as a means for projecting community or individual identities into the environment in which one existed (Evans 2007). Currently there is little evidence for the deliberate scattering of artefacts in such a way, but the increased awareness of the potential ritual nature of artefacts in pits and enclosures on settlement sites (Fulford 2001, 200) should remind us that this is a possibility.

Whilst discussing the various ways through which metal objects could enter the archaeological record it is important to note that there was both regional and chronological variation in the use of metal artefacts, and so similar activities undertaken at different times and places will not necessarily result in the same patterns of artefact loss. Roman coins and artefacts are not widely found on non-military sites in much of western and northern Britain (Taylor 2007, 64), and this is likely to reflect regional variation in the supply of objects to rural sites as well as regional differences in attitudes towards the adoption of Roman portable material culture. The chronological variation in the supply of objects is perhaps best illustrated with reference to coinage, and Reece (2003, 12) has shown how variation in the numbers of coins from different periods at Roman sites is more likely to reflect the regional pattern of supply than the specific site history of individual sites. These variations in the circulation of metal objects in the past will play an important part in the availability of PAS data, and it is important to be aware of them when seeking to interpret findspots.

Post-depositional processes

The above discussion has addressed the main reasons for the entry of metal artefacts into the archaeological record. However, reconciling the finds gathered by a metal detector user from a ploughed field with the original events surrounding the deposition of these objects is far from straightforward. This is exemplified by the extensive body of literature now available on the problems of interpretation associated with fieldwalking survey data. The principal issue is that finds recovered from the ploughzone of agricultural fields are not in their original archaeological context. Surface artefact scatters by their very nature are disturbed archaeological deposits which have been damaged and shifted by agricultural activity such as ploughing (Halkon 2001) and destoning (Whitmore 2004, 11), and their relationship with sub-surface archaeological features is often uncertain (Millett 1987; 1999; 2000). This has evident implications for establishing potential relationships between artefacts, and thus for the use of such finds as potential indicators of ancient activity. Of major concern has been the

extent to which artefacts are moved laterally by the action of the plough and the subject has been given a great deal of attention in print (Ammerman 1985; Boismier 1997; Clark and Schofield 1991; Foard 1978; Millett 1987; 1999; 2000). Alongside agricultural disturbance the distribution of surface scatters have the potential to be affected by natural processes including gravitational downslope movement (Rick 1976), erosion, subsidence and the activity of fauna including earthworms, insects and burrowing mammals (Allen 1991). The extent to which such post-depositional processes may have affected finds reported to the PAS is incredibly difficult to quantify as it will vary considerably from findspot to findspot. It might in some circumstances be possible to gain an understanding of recent tillage history from individual detector users or landowners, although this sort of information is not routinely provided by metal detector users to the PAS. It is therefore important to be aware of these limitations when seeking to interpret the data and any conclusions drawn must come with a caveat.

Artefact recovery

Besides the potential for post-depositional disturbance, any archaeological interpretation of artefact scatters must also take account of the potential for bias during the collection of the data. As discussed in Chapter 1 (pp. 2–3, **Fig. 1**), most metal detector finds are recovered from arable land and this leads to a strong geographical bias in the data towards regions where arable land is most widespread. The presence of areas of non-agricultural land including towns, drainage, mountainous terrain, moorland and woodland all have the potential to affect the distribution of PAS data at macro- and micro-regional scales. However, these factors are often relatively easy to recognize, as geographical factors which affect artefact recovery can usually be plotted alongside PAS data in distribution maps.

Other, more nuanced, factors which affect the recovery of artefacts can be more difficult to recognize. For example, the variable effects on the surface visibility of artefacts have been widely discussed in the fieldwalking literature. Potential factors which might bias artefact recovery include weather, type and height of surface crop, the colour and texture of soil and the presence of other objects such as stones on the surface (Foard 1978, 362; Bowden 1999, 125; van Leusen 2002, 81). Whilst visibility is not such an issue for metal detector users, a range of similar issues are likely to affect the rate at which they recover artefacts. A metal detector works by sending an electromagnetic current through the soil, and the depth to which a metal detector signal can penetrate will therefore be affected by factors including the density, mineral content and level of moisture in the soil (Dobinson and Denison 1995; Chester-Kadwell 2009, 84). Artefact recovery during fieldwalking surveys can also be influenced by team members' varying experience in artefact recognition (van Leusen 2002, 81), and similar variation in levels of skill and in the quality of equipment used are likely to affect the rate at which detector users recover artefacts (Chester-Kadwell 2009, 82). Archaeologists involved with fieldwalking surveys have employed various methods to try to mitigate bias. Foard (1978, 359), for example, has suggested that field survey should ideally be

undertaken by one individual, reducing the variables affecting data from different survey units. Other attempts to reduce bias include specifying a time for walking a set distance, thus slowing down those who are prone to walking too rapidly and speeding up those who are too meticulous (Bowden 1999, 126), as well as rotating team members across different sample units in the survey. Some archaeologists have developed statistical methods for assessing the extent of bias and advocate the 'correction' of data (van Leusen 2002, 83). Clearly the methods of recovery for PAS data, gathered by multiple individuals with no set methodology, preclude such bias reduction or correction.

Exacerbating the issue is the fact that finds recorded on the PAS database go through yet another stage before they are available to the researcher, and there is further potential for the introduction of bias during the creation of the PAS record itself. Issues include whether an FLO has the time to record all objects from a particular location, whether they have an interest in finds of a particular period or type, or graphical error in the recording of a date or a national grid reference. Each of these stages of potential introduction of bias has the potential to affect interpretation, yet these factors are extremely difficult to quantify systematically because in many cases it will be unclear whether they are present or not. This would present serious problems for anyone seeking to 'correct' biases within the data (Chester-Kadwell 2009, 88).

Whilst individual biases within PAS data are hard to quantify, some are more recognizable than others. An obvious example is that metal detector users actively search for metal objects, and most groups of artefacts from an archaeological 'site' recorded by the PAS are likely to have a much greater quantity of metal objects than ceramics or other non-metal artefacts. In one respect such a group of material can be seen as opposite to the type of assemblage collected by many fieldwalking surveys, where archaeologists are significantly more likely to recover ceramics than finds of other material (Carreté *et al.* 1995, 52). Pottery sherds are often abundant and usually visible in the plough soil and are therefore easily recognized by archaeological fieldwalkers, whilst other types of surface find can be less easy to spot. However, because of differences in personal interest and the differing ability between metal detector users to recognize and collect non-metal artefacts it is very difficult to assess how much non-metal material is also associated with a 'site'. For example, it can be difficult to determine whether ceramic material is absent on the PAS database for a particular location because it was genuinely missing from the plough soil in the area where metal artefacts were found, or whether artefacts were present but were not collected through a lack of interest, a lack of recognition, or simply were not reported to an FLO.

As part of this research a questionnaire was designed to assess the extent to which choices made by metal detector users affect PAS data, and the methodology and results for this are presented in Appendix 1 (the questionnaire itself is presented in Appendix 2). The 65 respondents were asked whether they collected and reported non-metal objects. Whilst 53 (81.5 per cent) said that they collected pottery from the surface of the

fields they detected on, only 38 (58.5 per cent) regularly reported these to their FLO. It is encouraging that many metal detector users report their pottery finds, yet these figures also demonstrate that it would be wrong to assume that an absence of ceramics on the PAS database for a particular location necessarily indicates an absence of associated pottery.

The preponderance for metal artefacts on the PAS database is a knowable bias, and any interpretation of the data can take this into consideration. However, there are many factors influencing the recovery of amateur metal detector finds which are in most cases unknowable because the information is not provided to the FLO at the time finds are reported. These include factors such as the quality of the equipment being used, the condition of the earth being searched and the amount of time spent searching in particular locations.

The answers to such questions are not routinely presented on the PAS database, but in any case, the haphazard nature of collection, and the generally low levels of record keeping amongst metal detector users would normally preclude access to such information. Respondents to the questionnaire were asked whether they recorded how long they had searched at particular locations. Of 65 respondents 19 (29.2 per cent) said that they kept such records, whilst 45 (69.2 per cent) did not.

Comments by one metal detector user reflect the haphazard manner in which artefacts are collected;

Like many other metal detectorists, I try and get permission wherever possible to detect. Then when I get a field, I go around the boundaries, zig-zag through the centre ... if nothing I go to the next field, looking for 'hot spots' – not one off finds. Therefore few fields are ever done carefully; but when I find a good field, bamboo poles and flags come out and I do the whole field thoroughly [see Appendix 1].

Clearly, such a method would result in some areas being searched much more intensively than others, with those areas yielding the least artefacts subject to the lowest level of investigation. This has evident implications for the potential for using such data as evidence for land use beyond the confines of the 'site', and the effect may be to exaggerate the numbers of finds coming from potential foci for activity, to the detriment of those finds related to 'off-site' activity or very small sites. However, because there is generally little information available on the methodology (or lack of methodology) employed by individual metal detector users, it is difficult to suggest whether or not this is the case for all detector finds on the PAS database.

Metal detector users clearly undertake their hobby in the hope of discovering archaeological objects, and for this reason it is reasonable to expect that they will focus on areas they consider to be most productive (Chester-Kadwell 2009, 85). There are now several publications aimed at metal detector users which provide advice on how to locate archaeological sites (Fletcher 2002; Villanueva 2006; 2007). Titles such as *Site Research for Detectorists*, *Fieldwalkers and Archaeologists* (Villanueva 2006) and *Successful Detecting Sites* (Villanueva 2007) indicate that searching is often not done at random. This suggests that the distribution of PAS data may be biased towards areas already well known through other archaeological methods.

In order to explore this, respondents to the questionnaire were asked which factors were important in their choice of where to search (Appendix 1). Permission to search was the overriding factor in determining where respondents detected, and a number indicated qualitatively that they would search wherever they could get permission, regardless of the likelihood of ancient settlement (see Appendix 1, p. 132). Proximity to where detector users live was also a consideration, and over half of respondents cited this as important. Just under a quarter considered parking as an important factor in where to search. Forty per cent of respondents considered the presence of recorded archaeological sites important, whilst 46.2 per cent were attracted to areas where there were no archaeological sites known to them, but where they thought settlement was likely. A number of the qualitative responses to this section indicate that for some detector users it is the peace, quiet and solitude of the countryside that helps them choose where to go. Such responses include; 'the enjoyment of walking and detecting on fields in remote areas', 'the most isolated spot possible' and 'to enjoy the fields and the local terrain, often hidden from the roads'.

Respondents were asked to rate the presence of known archaeological sites as 'very important', 'important' or 'not important' in their choice on where to detect. 58.5 per cent indicated that the presence of archaeological sites was not an important factor, 29 per cent stated that it was important, whilst only 11 per cent regarded their presence as a very important factor.

It is important to be aware of the fact that some respondents may have seen it as in the best interest of their hobby to suggest that they do not detect on known archaeological sites. However, it is fairly clear from the responses that whilst some metal detector users would choose to search on known archaeological sites if possible, there are other factors that influence their decision. The potential for detector users to recover artefacts from areas from where there is no previous archaeological evidence is clear.

One limitation with data gathered through metal detecting is the lack of information many detector users record for areas where they have searched yet found nothing. Twenty-seven respondents to the questionnaire (41.5 per cent) made no notes on areas where they had found nothing, 34 (52.3 per cent) kept notes and three (4.6 per cent) left this section blank. There is currently no provision for providing negative evidence on the PAS database, and the lack of negative data provided to FLOs makes it difficult to determine areas where there is a genuine lack of evidence as opposed to those that have not been searched. Were negative data to be reported it is of course important to be aware of Barford *et al.*'s argument that areas with low artefact yields may represent relatively intact sub-surface archaeology (Barford *et al.* 2000, 77–8), perhaps beyond the depth of the metal detector signal. Indeed, one detector user interviewed personally explained how areas that he had searched which had produced no finds had proved productive at a later date, under different conditions. Yet as it stands, the lack of provision of such data by metal detector users introduces a further bias to the dataset.

One of the most important factors affecting the interpretative value of PAS data concerns spatial precision.

Ideally, metal detector users would all record their finds to full ten figure national grid references, allowing accurate plotting of all finds. Whilst the adoption of GPS devices is increasing, and some metal detector users who make use of this technology are providing very precise find spots, it is more common for finders to report their finds to six or eight figures. Furthermore, where several artefacts are recovered from within the same general area a grid reference is often provided which marks the centre of a distribution of finds or the centre of the field from which artefacts were recovered. This level of precision is suitable for recognizing areas of discrete activity at macro- and micro-regional levels, but it is unsuitable for considering how the distribution of finds might relate to specific areas of activity within a site as undertaken by some archaeologists (Gardner 1999; 2007; Allison *et al.* 2004). It is important to remember that a grid reference provides information about an area within which finds were discovered, not the point itself, so a six figure grid reference provided for a find identifies an area of 100m² within which it was discovered. A four figure grid reference provides an area of 1km² and at this level of precision one's ability to discuss meaningful patterns of finds at a micro level is restricted. However, a four figure grid reference may still be of some use for examining broad patterns of distribution.

Statistics downloaded from the PAS website indicate that in 2009 87.12 per cent of artefacts recorded on the PAS database were recorded to at least a six figure grid reference, whereas in 1998 (the first year for which statistics are available) the figure was 68.65 per cent. The number of artefacts recorded to this level of precision is therefore steadily improving. However, it is important to be aware of the possibility of inaccurate spatial information, even where it is apparently good. For instance, some finders do not make immediate notes about where their finds were discovered. Eleven questionnaire respondents (16.9 per cent) said that they did not make any formal record of where artefacts were found, preferring to 'keep mental records'. Encouragingly, 12 respondents (18.5 per cent) recorded the location of their finds in the field with a GPS device and 10 (15.4 per cent) recorded the location with a map in the field. Thirty-six recorded the location of their finds on a map at home (55.4 per cent), whilst 46 (70.8 per cent) recorded their finds on a map provided by a FLO (the numbers add up to more than 100 per cent because some respondents ticked several boxes). Clearly, most confidence can be placed on the locations of those finds that were recorded whilst out in the field. Waiting until back at home to mark the point of discovery arguably increases the likelihood of getting the precise location wrong, whilst relying on memory, with no written record, raises the risk further. Whilst the PAS provides information on whether grid references were provided from a GPS, pointed out on a map or provided by the finder, it does not routinely collect information about the methods finders use to ascertain their own grid references and this can make assessing the accuracy of the findspots provided on the PAS database difficult.

Whilst it is often beneficial for finders to record the location of their discoveries themselves, the provision of grid references to FLOs by the finders, without indicating precisely where they were found on a map, introduces

further potential for error. Possible errors (all of which have on occasion been discovered in PAS data during this research) include wrong letter prefixes placing the finds in the wrong grid square, eastings and northings recorded back to front, and the mistyping of grid references during the input stage. Such errors are sometimes easily recognized when data are displayed in computerized Geographical Information System (GIS); where finds occur in the sea, for example, or where finds are clearly in the wrong county or parish. However, in some cases it can be difficult to recognize these errors, and there must be occasional records that remain inaccurate.

Where a number of artefacts have been recovered from within fairly close proximity they are often recorded with a single grid reference, marking the general area of scattered finds. Often, FLOs use a notes section to explain whether grid references relate to the general area of finds, or whether a reference simply indicates the centre of the field in which finds were recovered. Whilst such details are not of major importance when considering the regional distribution of data, this information is extremely useful when investigating micro-scale distributions.

The highly variable nature of the data on the PAS database, and the possibility for bias to have crept in at a number of stages during the collection and recording of finds makes any attempt at statistical assessments or correction of bias as proposed by workers such as van Leusen (2002) extremely difficult. But this should not result in complete pessimism in the interpretative use of the data, and it is simply important to be aware of the limitations associated with making use of such a resource. Work undertaken by Gardiner (1984; 1987) on unsystematically gathered collections of prehistoric flints has demonstrated how even finds discovered under poorly recorded circumstances have value for understanding settlement in the Neolithic period in Britain. Gardiner considered artefacts held in a number of museum and private collections, gathered by a number of different individuals. Many of these had had no archaeological training and most were deceased, preventing the gathering of further information (Gardiner 1984, 15). The parallels with PAS data are obvious. Gardiner warns that to ignore the data completely would be to neglect a significant amount of useful information, in her case over a quarter of a million diagnostic artefacts (Gardiner 1984, 15). She argues that collections of unsystematic data provide important information about broad, regional settlement patterns in later prehistory, at a low level of analysis (Gardiner 1984, 15). Gardiner cites accurate provenance as one of the most important problems to overcome, and she was often attempting to establish accurate provenances for objects where little information was available, having to undertake research and often starting from as little information as a parish name (Gardiner 1987, 52). As discussed above, PAS data are generally recorded with a provenance far better than to parish level, and sometimes 10 figure grid references are provided. It is clear that spatial precision varies greatly between PAS records, but where data are recorded at a sufficiently high level, to six figure grid references or above, they have value for exploring regional and local patterns of settlement.

The above discussion has sought to identify the principal issues associated with PAS data as an archaeological resource. The remainder of the chapter presents the methodology adopted in the case studies. This methodology has been developed in order to assess the extent to which the above problems affect interpretation, and to allow maximum interpretative potential of the data in order to enhance understanding of the Roman period in each of the case study regions.

Methodology

As the Roman period forms the historical context for this research the dataset incorporated all finds recorded on the PAS database as Roman, as well as those dating from the 1st century BC and up to AD 550. This was in order to explore aspects of continuity between the Roman period and the preceding late pre-Roman Iron Age and the post-Roman early medieval periods. In each regional case study, analysis was undertaken at two levels. Initially, a macro-regional analysis explored the general distribution of PAS data and provided a broad overview of the data's regional potential. A second group of analyses focused on a small number of localized case studies which aimed to assess the value of the data as a tool for dating and characterizing individual Romano-British sites and landscapes. A more detailed overview of these methods follows.

Macro-regional analysis

In each regional case study the dataset was mapped in a GIS and compared with a PAS dataset comprising data from all other periods. This was in order to explore whether there are broad areas where metal detector users search but do not find Roman material, allowing recognition of genuine gaps in the Romano-British settlement pattern, as opposed to gaps which are the result of areas where finds have simply not been reported. In order to explore the extent to which physical constraints restrict metal detector users from searching, and the consequent effect that this has on the distribution of Roman finds, the Roman data were then mapped alongside topography, urban areas, woodland and other non-agricultural land.¹

In each case study the distribution of PAS data was then plotted alongside that of late Iron Age and Romano-British data supplied by the relevant Historic Environment Records (HERs). This enabled a visual comparison of the two types of data in order to establish whether there were any broad differences in their distributions, allowing areas of potentially new information represented by PAS data to be recognized. Comparison of the distribution of the two datasets was also an important part of the micro-regional studies, and the characteristics and variability in HER data are discussed in more detail below.

Whilst visual comparisons of the two datasets allowed very general differences to be identified, the regional distribution of PAS and HER data were also compared quantitatively by dividing each case study region into distinct areas. Each region was divided based upon Natural England's distinctive 'Natural Areas' (Natural England 2009b). These units were selected as a basis for division because they are distinguished by different physical characteristics including landform,

geology, land use and human impact (Natural England 2009b). As these elements may influence the recovery of artefacts by metal detector users in different areas this was considered an appropriate way of dividing each case study region. The densities of Roman PAS finds and HER records from each Natural Area were then compared in order to establish whether there were broad areas well represented by PAS data and not well represented by information on the HERs, and vice versa.

The above approach allowed the general availability of PAS data over broad areas to be explored, but was not designed to provide information on precise locations from where particularly high quantities of PAS data are available. In order to recognize such areas GIS based kernel density analyses were undertaken. Kernel density analysis interpolates the density of features within a user-defined search radius (the 'kernel'), producing an average density value for each cell, which provides a set of continuous surface values that allow recognition of areas of relative intensity (O'Sullivan and Unwin 2003, 86; Conolly and Lake 2006, 175–7). Essentially, kernel density analysis allows recognition of 'hotspots' within each data set, enabling comparison of the relative abundance of different data types. As a general rule, the parameters used in the regional analyses were a search radius of 2,000km² with a cell display of 200m. Where alternative parameters were used this is specified in the text. This approach allowed comparison of the distributions of PAS and HER data, providing an indication of areas where each type of data is best represented. Potential reasons for similarities and differences in the distributions of the two datasets were then explored.

Aside from considering the general distribution of PAS data, their potential value for enhancing understanding of the Roman period was explored through an assessment of the number of individual findspots of Roman date in each case study region. This was further explored by an assessment of the number of potential Romano-British sites the individual findspots represent. In each case study an attempt was also made to identify which of these potential sites had not previously been recorded on an HER database (discussed in more detail below). Such assessments are made difficult by the interpretative issue of defining archaeological sites based upon haphazardly gathered surface finds. We have seen above how many processes can affect the distribution of artefacts between their point of deposition and their availability as a record on the PAS database, and because of these factors site definition must always remain somewhat tentative.

When attempting to utilize artefacts that have been removed from their stratigraphic context, no relationship can be considered certain (Millett 1987; 1999; 2000). However, because PAS finds are not recorded across set sample units, and because there is no clear way of ascertaining whether the fields in which metal finds discovered also contained non-metal cultural material (beyond direct communication with the finders, which is clearly impractical when dealing with large regional datasets), establishing a relationship between two or more disparate finds is problematic. The only clear way of realistically doing this is to impose spatial limits, and to assess the finds qualitatively within these limits, considering

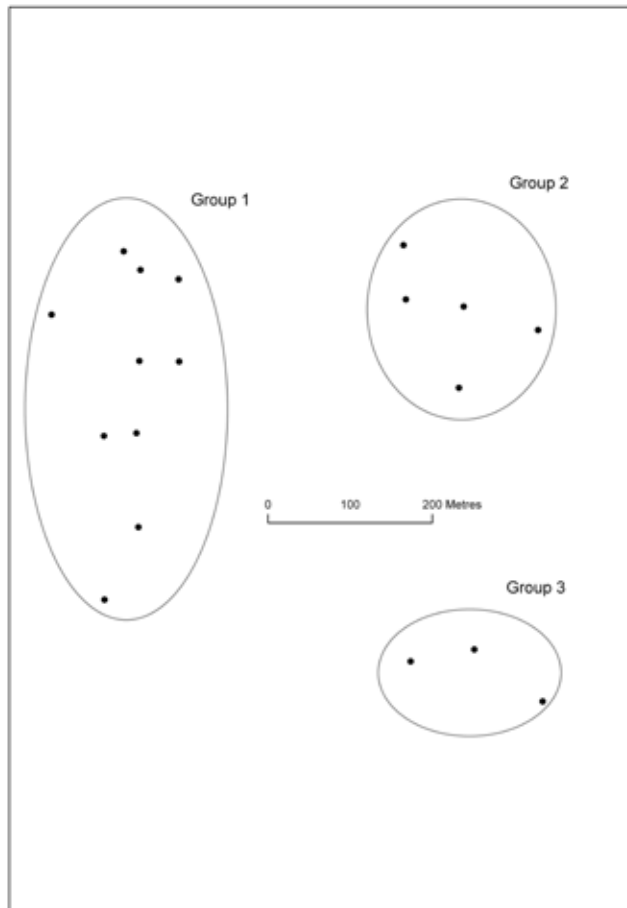


Figure 11 Example of the grouping of PAS finds into distinct findspots based upon a parameter of 200m

if finds within a certain distance of one another have the potential to be associated chronologically. Any imposition of such a spatial limit must be arbitrary, and no devised spatial parameters can hope to account for all possibilities. For instance, a general scatter of Roman archaeological material in the plough soil associated with a roadside settlement may extend over several hundred metres in a linear pattern. If much of this material consists of ceramics and other non-metal artefacts then it is highly likely that it will be missed or ignored by some metal detector users. Metal artefacts within the general scatter may be discovered some distance from one another, and without the other objects that form the links in the chain between the metal finds it might be possible to suggest that these finds represent discrete areas of activity. On the other hand it would be dangerous to simply assume a connection between finds discovered several hundred metres apart, as in areas of dense settlement distinct sites can be located within relatively close proximity.

There is no easy solution to the problem, and the most useful approach is to consider each case on its qualitative merits. However, when dealing with large quantities of data over wide geographical areas, initial spatial parameters need to be set in order to enable rapid assessment of large numbers of findspots. Whilst recognizing the problems with imposing spatial limits, the approach adopted in this research has been to consider finds with grid references within 200m of one another as from the same findspot. Groups of finds recovered from within these spatial parameters may be seen as

potentially associated with the same area of activity, based upon the distinct likelihood that other artefacts not retrieved by metal detector users are present in and under the plough soil. It is important here to note that a grid reference refers to an area and not a specific point, and so finds grouped together based upon a six figure grid reference which suggests they were recovered 200m apart may actually, at the greatest extreme, have been recovered from up to 424m from one another. Finds have also been grouped cumulatively, so finds distributed over a wide area have been grouped together if they are linked by other finds, as illustrated in **Figure 11**. Whilst arbitrary, the above spatial parameters were devised by considering the size of a variety of rural settlements known from plans and illustrated in Hingley's *Rural Settlement in Roman Britain* (1989). Individual houses range in size from as little as 5m across at some small rural farmsteads to over 100m at some large villas, whereas settlements consisting of a number of houses and compounds can vary in size from around 100m across at small hamlets to over a kilometre at some of the larger villages and towns.

The use of a spatial parameter of 200m aims to sit somewhere within the size range of these different types of settlements, incorporating artefacts that may have been lost or deposited on-site as well as those in the immediate area surrounding a site. It is possible that the method will result in several farmsteads or hamlets being grouped together as a single site on occasion, just as it is possible that it will result in several parts of large settlements being recognized as individual sites. However, the opportunities for post-depositional artefact dispersal, the variation in levels of artefact recovery and reporting and the difficulties of defining precise findspots based upon information supplied to the PAS make a more refined approach to site definition problematic. The adopted approach serves as a pragmatic method for assessing the number of distinct findspots in each case study region, and for classifying the finds from each location into interpretative groups.

Statistics generated using such an approach will clearly be a direct result of the method used, and an alternative set of parameters would evidently produce different results. The effects of this have been explored by experiments in varying the spatial parameters applied to a group of 20 parishes with PAS data from north-west Wiltshire (**Table 3**). Using different spatial parameters of 100m, 200m and 400m, these experiments showed that whilst in some cases doubling or halving the parameters did not affect the number of unique findspots recognized, in others it had a dramatic effect. At Brockenhorough, for instance, halving the parameters from a 200m to a 100m radius resulted in an increase of four findspots, whilst doubling the parameters to 400m had no effect. In Lacock however, halving the search radius to 100m had no effect on the number of findspots recognized, whilst doubling it to 400m reduced the number of findspots by a third, from six to four. Based on these experiments it is possible to suggest that doubling the spatial parameters from 200m to 400m would result in a reduction in the number of distinct findspots by 8.3 per cent. Conversely, halving the spatial parameters to 100m would produce an increase of 18.3 per cent.

The use of spatial parameters of 200m have been adhered to throughout this study, yet the above results show that the

statistics generated reflect the particular method used, and would vary if alternative techniques were employed. This must be borne in mind when seeking to interpret the results.

Site definition

Having specified how unique findspots have been identified, it is possible to discuss how artefacts from these findspots might be interpreted. Some findspots are represented by single artefacts, whilst at others tens, and in some cases hundreds, of objects have been recovered. The application of a numerical threshold serves as one way to discriminate between potential settlements and other findspots where finds may relate to more ephemeral processes. However, because of the various processes potentially affecting the quantity of data available from any one location, it is difficult to be categorical about how many artefacts should be required for a findspot to be considered significant. It would clearly be inappropriate to see a single artefact as evidence for substantial activity in the past, yet because of the uncertainty concerning the original numbers of artefacts that were originally deposited or lost, which may not have been discovered by metal detector users or reported for a variety of reasons, it is also problematic to simply ignore such evidence as insignificant. Of course, the less material found from a particular location, the less able we are to make specific interpretations about what the presence of those finds mean, in terms of activities of people in the past. Beyond further archaeological investigation through excavation or geophysical survey we must simply accept this. However, with a pragmatic methodology we can at least establish a minimum interpretative value for each assemblage of finds.

Table 4 presents an interpretative schema for all findspots represented by PAS data, influenced by the work of Arthur (1991) and Perkins (1999) who explored ways of interpreting surface scatters of material in Italy. Findspots have been grouped into five categories according to the material available on the PAS database: single metal artefacts; small groups of between two and four metal artefacts; medium groups of between five and ten metal artefacts; large groups of eleven or more artefacts; and findspots represented by exclusively non-metal finds. Non-metal artefacts have been excluded from the interpretative schema as they are not regularly reported by all metal detector users, though where they are present they may aid interpretation of individual findspots. The use of such groups allows all findspots represented by PAS data to be included in regional analysis, without ignoring locations where small numbers or single finds were discovered. This means that even findspots which represent activity that occurred during periods when fewer metal objects were in circulation, or sites where undisturbed archaeology below the plough zone has reduced the number of objects recovered, can be included in the regional analysis. The table presents a range of possible interpretations for the presence of the artefacts in the ploughsoil. It is extremely difficult to assess the probability of any of the possible interpretations, as an analysis at the regional scale cannot take into account the localized processes which may have resulted in the distribution of the finds.

The schema is designed to show how interpretations can become more confident at findspots where more artefacts

Parish name	100m radius	200m radius	400m radius
Easton Grey	1	0	0
Grittleton	5	5	5
Hullavington	3	3	3
Lacock	6	6	4
Kington St Michael	6	6	5
Luckington	2	2	2
Nettleton	1	1	1
Norton	1	1	1
Stanton St Quinton	2	2	2
Yatton Keynell	1	1	1
Chippenham	3	3	3
Christian Malford	5	5	5
Langley Burrell Without	7	6	5
Sutton Benger	4	3	3
Box	4	3	3
Brockenborough	7	3	3
Chippenham Without	3	2	2
Colerne	5	3	3
Corsham	1	1	1
St Paul Malmesbury Without	4	4	3
Total	71	60	55

Table 3 Effects of variable spatial parameters on recognition of number of unique findspots represented by PAS data in north-west Wiltshire

are available, although even at these there are a wide range of interpretative possibilities. It serves as a means of illustrating that although findspots of low numbers of artefacts may be significant, only those with groups of artefacts of medium and large size are likely to be amenable to detailed interpretation, and might therefore be seen as evidence for potentially significant activity.

This is not to assume that findspots represented by lower numbers are not significant, but simply that there is insufficient evidence available to suggest that they are. As this study is predominantly concerned with metal detector finds, findspots of exclusively non-metal objects have not been considered together in a category of their own, regardless of the number of finds recovered. This has enabled the inclusion of such findspots for purposes of distribution analysis, but as non-metal finds are not routinely collected by all metal detector users, and because many distributions of ceramics are considered to have entered the archaeological record in different ways to most metalwork, they have not been considered as appropriate for defining areas of potentially significant activity.

The regional variation in the availability of PAS data has been discussed in Chapter 1. Because of this regional variation it is important to consider whether the quantitative parameters for site definition ought to be adapted in areas characterized by less data than others. In Cumbria, for example, metal artefacts are much less widely distributed

	Single metal objects	Small groups of metal objects (2–4 artefacts)	Medium groups of metal objects (5–10 artefacts)	Large groups of metal objects (11+ artefacts)
Interpretative possibilities	Casual loss during activity within landscape in the past	Discovery of a small number of artefacts from a relatively undisturbed archaeological deposit	Increasing evidence for a disturbed site beneath the soil – artefacts associated with a habitation site	Increasing evidence for a disturbed site beneath the soil
	Single artefact removed from vicinity of other finds by agricultural or geomorphological processes	Small group of artefacts removed from vicinity of other finds by agricultural or geomorphological processes	Group of artefacts associated with the burial of the dead (cemetery?)	Deliberate deposition for religious or secular purposes
	Discovery of one artefact from relatively undisturbed archaeological deposit	Casual loss during activity within landscape in the past (increased likelihood of more intensive activity)	Deliberate deposition for religious or secular purposes (votive deposit or a hoard of wealth)	Group of artefacts associated with the burial of the dead (cemetery?)
	Artefact associated with low status site where metal artefacts are uncommon	Repeated casual loss as a result of repeated activity at temporary/seasonal location of activity	Medium group of artefacts removed from vicinity of other finds/ location of settlement by agricultural or geomorphological processes	Repeated casual loss in an intensively used part of the landscape
	Object discarded along with midden waste as manure scatters in the past	Artefacts associated with low status site where metal artefacts are uncommon	Repeated casual loss as a result of repeated activity at temporary/seasonal location of activity	Objects from manure scatters (increasingly less likely the more objects found)
	Deliberate deposition for religious or secular purposes (votive deposit or a hoard of wealth)	Group of artefacts associated with the burial of the dead	Casual loss during activity within landscape in the past (increased likelihood of focus for activity)	
	Single artefact associated with the burial of the dead	Deliberate deposition for religious or secular purposes (votive deposit or a hoard of wealth) Objects from manure scatters (perhaps less likely than if a single object is found)	Objects discarded along with midden waste as manure scatters in the past (increasingly less likely the more objects found)	

Table 4 Interpretative schema for findspots represented by PAS data

than in the other case study regions. The methodology applied here has not needed significant adaption in these circumstances, but it has been necessary to reduce the number of artefacts required to define a site as potentially significant. So, whereas in most regional case studies it has been possible to suggest that medium and large groups may be considered as potential sites warranting further investigation, in Cumbria this was expanded to include findspots represented by small groups of finds also.

The above methodology has allowed a calculation of the total number of PAS findspots in each case study region, as well as the total number of potential Romano-British sites that these findspots may relate to. One way to assess the potential value of PAS data is to consider how many of these findspots and sites relate to archaeological activity not previously recorded on an HER.

As discussed above, a PAS findspot has been defined as a group of finds with grid references within 200m. Similarly, HER records within 200m of a PAS findspot have also been considered as potentially linked, and PAS findspots have

been considered ‘new’ if they were located at least 200m from the nearest HER record. They are considered likely to be part of the same, previously recorded activity, if they are within 200m of an HER record.

The adoption of alternative spatial parameters have been shown to have had an impact on the resultant statistics concerning numbers of individual PAS findspots (see p. 23). Similarly, it is important to recognize that an assessment of the numbers of PAS findspots which represent new sites will also be governed by the specific spatial parameters used.

Table 5 shows the results of experiments with varying spatial parameters on PAS data from 20 parishes in north-west Wiltshire, showing numbers of findspots associated with HER data.

In some cases the application of different spatial parameters did not have a major impact, and in 12 of the parishes there was no change in the number of findspots associated with HER data. Eleven of the findspots had no associated HER records regardless of the different spatial parameters adopted. However, in eight of the parishes

varying the spatial parameters did have an impact. The results of the above experiments show that if a spatial parameter of 200m is applied 11.7 per cent of the findspots have HER data associated with them. Where a spatial parameter of 100m was adopted the number of findspots with associated HER data was reduced to 7 per cent. Where the spatial parameter was doubled to 400m the number of PAS findspots with associated HER records increased to 23.6 per cent.

Although the above experiments were undertaken on a small sample of HER and PAS data, and in a restricted geographical area, the results demonstrate the potential effects of using different spatial parameters on the statistics. Parameters of 200m have been adhered to throughout this study, but it is important to be aware of the effect that this particular methodology has had on the statistics.

The results of the spatial analyses in GIS may also have been influenced by factors within the datasets themselves. The issues concerning the accuracy of the spatial information provided for PAS data have been raised above (pp. 19–20). In some cases a single grid reference is given for a group of finds that relates to the centre of the field in which they were discovered, or the centre of a wide distribution of artefacts. Clearly, in such cases there is potential for the grid reference to be more than 200m from the nearest HER record, whereas the true distribution of finds is closer to the monument recorded on the HER.

There is also an issue concerning presentation of both datasets in GIS. Some HERs record spatial data for their records as polygons which give an indication of the extent of archaeological monuments on the ground. However, many HERs store their data as points relating to the centre of the monuments, and even those that maintain polygon records for some monuments are limited to the use of point data where the extent of monuments is unknown. There is therefore potential for the distortion of the spatial relationship between artefacts discovered on the ground and the geographical location and extent of archaeological sites and activities recorded on HERs. This issue is only likely to be problematic where PAS findspots and HER records occur within relatively close proximity, but in the absence of information regarding the spatial extent of many sites recorded on HERs it is difficult to quantify. It must be acknowledged that this may affect the statistics to a certain extent, as doubling the spatial parameters used for the investigation into the spatial relationship between the two data sets resulted in an increase of 23.6 per cent more PAS findspots associated with HER records.

Despite its potential problems, the approach described has provided a pragmatic method for provisionally assessing the number of sites represented by PAS data in each case study region, as well as for recognizing sites not previously recorded. The value of PAS data in each case study region has been further explored by considering the number of new sites as a percentage of the number of known Romano-British sites in the area. However, defining a 'site' based upon information recorded on an HER is sometimes as difficult as it is for PAS data, particularly where the evidence is from fieldwalking survey, casual finds or metal detecting. The issue is compounded by wide variation between HERs, and Taylor's

Parish name	100m radius	200m radius	400m radius
Easton Grey	0	0	0
Grittleton	0	0	0
Hullavington	0	0	0
Lacock	0	1	1
Kington St Michael	2	3	2
Luckington	0	0	1
Nettleton	0	0	0
Norton	0	0	0
Stanton St Quinton	0	0	0
Yatton Keynell	0	0	0
Chippenham	0	0	0
Christian Malford	0	0	0
Langley Burrell Without	0	0	1
Sutton Benger	0	0	1
Box	0	0	2
Brockenborough	2	2	2
Chippenham Without	0	0	1
Coleerne	1	1	2
Corsham	0	0	0
St Paul Malmesbury Without	0	0	0
Total	5	7	13

Table 5 Effects of variable spatial parameters on numbers of PAS findspots with associated HER data in north-west Wiltshire

national overview of Romano-British rural settlement (2007) has highlighted some of the difficulties with comparing HER data from different areas, not least the variable ways individual HERs describe evidence (Baker and Shepherd 1993, 104; Taylor 2007, 12, 23). Comparing the number of PAS sites with those recorded by the National Monuments Record (NMR) has presented a simpler alternative. Whilst the NMR does not hold such detailed information as HERs, its data are a national dataset and they serve as the best source of comparable information for numbers of known Romano-British sites from the different case study regions.

The total numbers of potential sites represented by PAS have been considered as a percentage of the number of Romano-British sites recorded on a dataset from the NMR, provided by English Heritage on 01/07/2009. Because the NMR is a national database, this has allowed the number of new sites represented by PAS data to be calculated as a percentage of the regional total which is consistent between each case study region. It has also allowed the number of new sites identified through PAS data in all case study regions to be expressed as a percentage of all Romano-British sites known from those areas. However, a note of caution is required. New PAS sites have been identified based upon their distance from HER and not NMR data. The NMR data does not include all potential evidence for Romano-British settlement, just those that have been interpreted as 'sites'. Using the NMR data to establish the number of new

PAS sites as a percentage of those already known may have resulted in an inflated percentage of new sites identified through PAS data. Nonetheless, the method has provided a useful way of comparing the potential contribution of PAS data from the different regional case studies.

Composition of assemblages

In each case study region potential sites represented by PAS data, i.e. findspots which have produced medium and large groups of metalwork (as well as small groups of metalwork in Cumbria), have had their assemblages summarized. At each potential site the assemblages were arranged into groups of coins, dress accessories, other finds and ceramics. This method of organization was selected because coins and dress accessories are the most common artefacts reported by metal detector users, and are recovered from most findspots, whilst other finds are more infrequently reported. Ceramics were included as a separate group because their presence at some findspots might assist interpretation, but also because they are only collected by some metal detector users and their inclusion in the 'other' category would skew the statistics at some findspots. Summary of the assemblages from each potential site in this way had two purposes. Firstly, it allowed comparison of the typical composition of assemblages from different case study regions in order to explore whether there are interregional differences in the types of Romano-British find recovered by metal detector users. Secondly, it provided a means for selecting individual or groups of findspots which merited more detailed analysis.

Micro-regional analysis

The purpose of the micro-regional analyses was to explore how PAS data are able to contribute to the understanding of localized Romano-British sites and landscapes through identification of new sites, and to explore questions of chronology and site characterization. In each case study chapter, two micro-regional analyses were undertaken. The decision of which potential sites to include as micro-level case studies was based upon scrutiny of the composition of assemblages at potential sites as well as their distribution. Attention was directed towards those which produced particularly large quantities of finds, as well as towards individual parishes or groups of parishes which produced several potential sites, particularly those in the vicinity of known Romano-British settlements.

In each micro-level case study GIS software was used to explore the local distribution of potential sites alongside HER data. Built-up areas, woodland and other non-agricultural land were also plotted, enabling recognition of local recovery constraints which may have affected the distribution of the datasets.

The method for distinguishing individual sites in the micro-level case studies essentially followed the same methodology as for the regional analyses. However, in some instances, where extensive distributions of PAS data occurred over wide areas for example, the methodology was adapted and data were interpreted based upon their localized pattern.

In most micro-level case studies the composition of the assemblages for each potential site were used to formulate an

interpretation. We have seen in Chapter 2 how recent work on finds assemblages from excavated sites has demonstrated the possibilities of using multivariate statistical techniques for the comparison of artefacts from different sites and from different archaeological contexts (Cool and Baxter 1995; 1999; 2002). Such approaches have shown how it is often possible to characterize sites through consideration of their material assemblages, and these statistical techniques are useful for comparing small finds from excavated sites. However, the author's attempts to use Correspondence Analysis for comparing groups of PAS findspots found the approach to be of limited value, largely because groups of Romano-British amateur metal detector finds are overwhelmingly dominated by coinage and brooches. Other artefacts are generally found in very low numbers, the result being that the artefact profiles for most findspots are extremely similar. This may partly be a result of the types of artefacts most amenable to recovery using a metal detector, and may also reflect the likelihood that many findspots of Romano-British material relate to rural settlement, and findspots therefore share similar 'rural artefact profiles'. However, where unusual groups do occur these were noted and an assessment of the significance of unusual or interesting individual artefacts was undertaken.

Although comparison of potential sites was not undertaken through statistical analysis of their small finds, the dominance of coinage at most findspots meant that many were susceptible to the statistical methods for comparing coin loss at Romano-British sites devised by Richard Reece (Reece 1991; 1995; 2002). Reece divided coins from archaeological sites into 21 groups based on their period of issue, and established a provincial pattern of coin loss against which coin profiles from individual sites could be compared. Reece's provincial pattern recognized low levels of coin loss before AD 260, high coin loss from 260 to 294, a dip between 294 and 330, a peak between 330 and 348, and generally high levels of loss in the 4th century AD (Reece 1995, 179). The pattern of coin loss at any Roman site should primarily be governed by this national pattern, and will only secondarily reflect the particular circumstances of an individual site (Casey 1988, 48; Reece 2003, 130). Comparing assemblages with the British background pattern produced by Reece allows genuine anomalies in the pattern of coinage at particular sites to be recognized, and Reece argued that even small divergences from the standard British coin pattern can be used to consider the nature of sites (Reece 2003, 134).

In order to allow comparison between sites with widely different quantities of coins Reece developed two alternative methods for comparing coins from different sites. One is centred around four broad period-based groupings of coins based on very general characteristics of the Roman currency system (Reece 1991, 12–13). By comparing the ratio of coinage from the different phases, Reece was able to demonstrate differences in the coin lists that were representative of the histories of the individual sites (Reece 1991, 102). For example, based on the ratio of 3rd-century AD radiates to 4th-century AD *nummi*, he showed clear distinctions between towns, early military sites and 'the rest' (Reece 1991, 104).

A second, more refined approach involves displaying coins as percentages or *per mils* (per 1000), enabling sites with

very different numbers of coins to be compared (Reece 1991, 11; 1995; 2002, 147). Sites can then be analysed based upon the proportions of coins they exhibit for each period, and compared with the British mean value for coin loss (Reece 1995; 2003). The way that coin profiles behave in relation to the British mean can be used to recognize differences and similarities between different sites. What is clear from Reece's work is that whilst it is possible in very general terms to identify urban and rural patterns of coin loss, there are wide variations within coin loss patterns that prevent simplistic groupings of 'site types' based on their coin profiles. Some towns, for example, display more of a rural pattern, and whilst Reece has suggested that temples are often characterized by high incidences of Valentinianic coinage, he also notes that there are exceptions. Moorhead has subsequently noted that Wiltshire has a marked preponderance of sites with high levels of Valentinianic coins (Moorhead 2001b, 96), and that perhaps this is a regional pattern, not one necessarily representative of temples (Moorhead 2001a, 225–34). The usefulness of Reece's method is therefore not to provide a 'quick-fix' to site characterization, but rather to provide a means for exploring the differences and similarities between groups of sites based upon their patterns of coin loss. Wide divergences from the British mean may point to sites meriting further investigation, whilst even subtle differences can be used to explore the relationship between sites.

Reece's work was directed towards coins recovered from archaeological sites, but there have also been recent efforts by members of the PAS (Bland pers. comm.; Moorhead pers. comm.), and recently by Philippa Walton (2010; 2012) in her doctoral research, to apply similar methods to amateur metal detector data. Walton (pers. comm.) and Moorhead (pers. comm.) have suggested that statistical methods may have validity for examining assemblages with 20 or more identifiable coins. Use of the method was therefore restricted in this study to potential sites which produced at least 20 identifiable Roman coins. It is important to note here that coins recovered from any potential site are likely to have been subject to the issues of bias discussed earlier (pp. 17–21) and post-depositional processes and recovery conditions will undoubtedly affect the sample of coins available for study. The intensity with which an area is searched by detector users, the level of skill they possess and the quality of the equipment they use are all factors which may affect the amount of coinage available from any findspot. Although late 3rd-century AD radiates and 4th-century AD *nummi* are the most common coins recovered from most Romano-British sites, the larger, heavier bronze coins of the 1st to 3rd centuries AD are more easily found with a metal detector, and Walton (2009, 16) has suggested that for this reason small assemblages of coins are likely to be dominated by these earlier coins. Detector users may also be selective when choosing what to report to FLOs and they have a tendency to present their best preserved coins or those they regard as uncommon in preference to the more frequently found and often poorly corroded radiates and *nummi* (Walton 2009, 16). It is important to be aware of these potential biases when seeking to interpret differences in coin profiles between potential sites, but the method has nevertheless provided a

way of attempting to compare and interpret finds from distinct findspots.²

Selection of case study regions

The above discussion has outlined the methodology adopted in each of the five regional case studies. The final part of this chapter introduces the case study regions and the reasons for their selection. At the time when the final case studies were selected (October 2007) the PAS database contained over 97,000 records relating to the Roman period, and it was therefore considered viable to investigate a sample of this data only. In order for the assessment of the potential value of Roman PAS data to be thoroughly explored, it was considered important to explore several regional case studies in areas with a variety of characteristics. The regional variation in the availability of PAS data has been described in Chapter 1, and this was a significant factor in the choice of case studies. It was considered important to include case studies with sufficient quantities of PAS data to make analysis worthwhile, whilst not containing such large quantities of data so as to make several case studies unfeasible. It was also considered necessary to include one case study region from which Roman PAS data are fairly poorly represented, so that assessment of their potential value was not entirely restricted to areas where they are widespread. Further issues influencing the choice of case study regions included geographical factors including topography, geology and land use, historical factors such as the known level of Romano-British occupation and contemporary factors such as the extent of archaeological endeavour.

These factors were considered important as all have a bearing on the potential contribution that amateur metal detector data can have for the archaeological understanding of a region. The local topography and geology are likely to affect the amount of land under cultivation, and the prevalence of different farming practices in different areas also affects the amount of land available to metal detector users. The historical and archaeological understanding of an area is important, as this may affect where metal detector users decide to search. The extent to which a region has been archaeologically investigated is of concern, as this may affect the regional impact that metal detector finds have on the understanding of Romano-British settlement.

Based on the considerations above, five regions were chosen as case studies. Modern administrative counties formed the basis for the regional selections, although one regional case study comprised two counties and another was formed from two adjacent unitary authorities.

It is important to note that these units are modern administrative constructs that bear little relation to the socio-political boundaries of the Roman or prehistoric periods. Many counties are not archaeologically distinct from those in their surrounding area, and there are often wide variations in the archaeological settlement pattern within a single county. However, modern administrative boundaries have been chosen as the basis for regional studies for a number of reasons. Firstly, finds are recorded on the PAS database based upon these units, and extraction and manipulation of the data is most practical when undertaken

on a county, district or parish basis. As the distribution of PAS data was compared with those of HERs this also allowed for the most straightforward comparison of the two datasets, as most HERs are also administered on a county basis.

Use of ancient Roman administrative units, the *civitates*, as the basis for regional case studies was discounted, as this would have resulted in labour-intensive manipulation of both PAS and HER data. In any case, current knowledge of the territorial extent of these units is very imprecisely known (Jones and Mattingly 1990, 154; Millett 1990, 67), and there is also likely to have been some fluidity over time as a result of Roman administrative changes (Frere 1987, 194). The decision to use modern administrative boundaries as opposed to measured blocks of land (as adopted by workers such as Halkon (2008), who investigated a landscape block of 600km² for his research into settlement patterns in Yorkshire), arose from the aforementioned provision of data based upon these units, and the wish to avoid the need for excessive data manipulation.

The five regions chosen for the study were Wiltshire, Northamptonshire, Worcestershire and Warwickshire (one region), North Lincolnshire and North East Lincolnshire (one region) and Cumbria. As noted above, selection of the regions was based on historical, geographical and practical factors relating to the quality of the data on the PAS database. A brief summary of the major characteristics of each region is given below, along with the reason for its selection. Each region is discussed in more detail in the relevant case studies.

Wiltshire

Wiltshire was chosen as an example of a county known to have been fairly extensively occupied during the Roman period. Besides a number of 'small towns' (Corney 2001), the county is one of the areas in the country best represented by villas (Percival 1976, 100). The county shares a similar settlement pattern to other counties in central southern Britain and so may be seen as representative of this area generally. Archaeological investigation in the county has been widespread, though Romano-British settlement in the county has not been the primary focus (Draper 2006, 1). Wiltshire's topography is mixed, and much of the county is dominated by chalk uplands; a large expanse of non-agricultural land is formed by Salisbury Plain which runs through the centre of the county. Forty-two per cent of Wiltshire's agricultural land is under arable cultivation, i.e. 33 per cent of the county's total area (based on 2007 statistics from the June Agricultural Survey (DEFRA 2009)). Wiltshire has had a FLO since 2003. The final PAS dataset was downloaded on 18 March 2009 and after data manipulation it included 4,767 individual artefacts. HER data for the county were supplied by Wiltshire County Council's Sites and Monuments Record in a Microsoft access database which was converted into ESRI Shapefile point format for use in GIS analysis. The data included 2,362 records of late Iron Age and Roman date.

Northamptonshire

Northamptonshire was chosen as a second example where Romano-British settlement is known to have been fairly

extensive, and once again much of the county has been subject to archaeological investigation (Tingle 2004). Northamptonshire is particularly well represented by evidence from aerial photography (Deegan and Foard 2007) and the Romano-British settlement pattern in the county is characterized by 'small towns' and villas (Taylor and Flitcroft 2004). Northamptonshire is part of a region where farming is dominated by arable agriculture and 58 per cent of the county's farmed land is used for crops, which is 45.4 per cent of the county's total area (based on 2007 statistics from the June Agricultural Survey (DEFRA 2009)). Northamptonshire is therefore the case study region with the most area available for the recovery of artefacts through metal detecting. The county has been represented by a FLO since 1999, and has a strong tradition of liaison between archaeologists and metal detector users (Curteis 1996; Curteis *et al.* 2000). The final PAS dataset for the county was downloaded on 12 September 2008 and after data manipulation it included 4,338 individual artefacts. HER data for the county were supplied by Northamptonshire County Council's Sites and Monuments Record in a Microsoft access database which was converted into ESRI Shapefile point format for use in GIS analysis. The data included 9,751 records of late Iron Age and Roman date.

Worcestershire and Warwickshire

Worcestershire and Warwickshire were chosen as a single case study because they are covered by a single FLO, and they are two fairly small counties. The counties are represented by some 'small towns' and villas, although these are not known in the same numbers as in Northamptonshire or Wiltshire. Whilst there has been some archaeological investigation in Worcestershire and Warwickshire, in neither county has it been so extensive as in Wiltshire or Northamptonshire (Booth 1996; 2001). This case study therefore serves as an example of 'middle-ground', between counties known to have been extensively settled during the Roman period, and those from which evidence for settlement is more limited. Much of the study area comprises the lowland plains of the Severn and Avon river valleys, though higher terrain occurs in the west of Worcestershire in the Malvern Hills. Forty-six per cent of the agricultural land for the combined counties is under arable cultivation, i.e. 34.4 per cent of the total area of the two counties (based on 2007 statistics from the June Agricultural Survey (DEFRA 2009)). The region has had a FLO since 2003, although the north of both counties was covered by the West Midlands FLO from 1997. The final PAS dataset for this region was downloaded on 3 August 2009 and after data manipulation it included 7,499 individual artefacts. HER data for the counties were supplied by Worcestershire County Council's Historic Environment and Archaeology Service and Warwickshire County Council's Historic Environment Record. The Worcestershire data were supplied in an access database and were converted into ESRI Shapefile point format for use in GIS analysis. They included 1,986 records of late Iron Age and Roman date. The Warwickshire data were supplied in ESRI Shapefile format and comprised both point and polygon data. The data included 2,918 records of late Iron Age and Roman date.

North Lincolnshire and North East Lincolnshire

The above case studies have a central and southern distribution and North Lincolnshire and North East Lincolnshire were selected to include a case study from a different geographical part of Britain. The county is better represented by Roman military sites than those further south, yet there are also examples of villas (Scott 1993, 98–101) and ‘small towns’ (Bennet 2001, 2). The study was initially intended also to include East Yorkshire, but because of the large quantity of data involved as well as a reduced level of quality in the early records from North Yorkshire, for practical purposes the study was reduced in scope. The study area is of mixed topography, with a low plain on the south banks of the Humber estuary, and higher terrain on the northernmost Lincolnshire Wolds. The area is dominated by arable agriculture which forms 78.1 per cent of agricultural land, i.e. 55.7 per cent of the total area of the two districts (based on 2007 statistics from the June Agricultural Survey (DEFRA 2009). The region has seen relatively intensive archaeological investigation, and has been represented by an FLO since 1997. There was a strong tradition of liaison between archaeologists and metal detector users in the region prior to the inception of the PAS (Austin 2009, 119). The final PAS dataset for this case study region was downloaded on 3 August 2009, and after data manipulation this included 1,370 individual artefacts. The HER data for the area were provided by North Lincolnshire Council’s Sites and Monuments Record and North East Lincolnshire Council’s Development Management Services. The North Lincolnshire data were supplied in ESRI Shapefile point format and included 904 late Iron Age and Roman records. Data from North East Lincolnshire were supplied in an Excel spreadsheet and converted into ESRI Shapefile point format for use in GIS analysis. They contained ten records of late Iron Age and Roman date.

Cumbria

Cumbria contrasts quite dramatically with the above case studies. Firmly within the Roman ‘military zone’, the county is well represented by military sites, but has no known ‘small towns’ or villas. Cumbria is often seen as having an archaeological landscape of ‘native’ character outside its forts (Dark and Dark 1997), with little evidence for the use of Roman material culture by many of its inhabitants. The county has seen fairly significant archaeological investigation, particularly through excavation at some of the county’s military sites and through aerial photography in the Solway Plain and the Eden Valley. Besides differing archaeologically, Cumbria’s topographical landscape contrasts with the much flatter counties from the south. The large mountainous area of the Lake District restricts arable agriculture and only 6.7 per cent of agriculture in Cumbria is arable, a mere 4.4 per cent of the total area of the county (based on 2007 statistics from the June Agricultural Survey (DEFRA 2009). Cumbria has had a FLO since 2003 and liaison between metal detector users and archaeologists in the county prior to the PAS was limited (Dot Boughton pers. comm.). Cumbria was included as a case study as it provided an opportunity to consider the impact of metal detector finds in a county with a very different landscape and settlement

pattern to that seen in the south, in an area not known to be well represented by archaeological finds of Roman date. The final PAS dataset for the county was downloaded on 13 October 2008 and after data manipulation this included 1,001 individual objects. The HER data for Cumbria were provided by Cumbria County Council’s Historic Environment Record in Mapinfo format and were converted into ESRI Shapefile point format for use in GIS analysis. They included 1,509 records of late Iron Age and Roman date and incorporated point and polygon data. A further 44 records were supplied by the Lake District National Park Historic Environment Record, who provided the data in an Excel spreadsheet. Eight records from Cumbria were also provided by the Yorkshire Dales National Park Authority, supplied in Excel spreadsheet format.

The above case studies incorporate a total of 18,975 individual artefacts and cover an area of 17,371 km², 11.5 per cent of the total area covered by the PAS (England and Wales). The selection aimed to include some of the regional variation seen in the availability of PAS data as well as differences in the Romano-British settlement pattern and the extent to which archaeological investigation has been undertaken. It is important to remember that the selection is only a sample and whilst the inclusion of several case studies was intended to assess the value of Roman PAS data in a number of regions, it is not representative of the whole country. Regions represented by particularly high quantities of PAS data, such as Norfolk and Suffolk have not been included because of the practical difficulties of analysing such large quantities of data. Only one case study has been included where data are not abundant, yet there are other regions where Roman period PAS data are not well represented, including most of Wales and the south-west peninsula of England. Nonetheless, the regions selected for detailed analysis in the following five chapters present five different case studies through which the value of PAS data as a resource for studying the Roman period could be explored.

Notes

- 1 In each case study region the topography dataset was created from Ordnance Survey data supplied under license from King’s College London. The urban areas dataset was downloaded from the government’s MAGIC (Multi-Agency Geographical Information for the Countryside) website, whilst datasets for woodland and non-agricultural land were based on data obtained from each case study region. The topography dataset was created from Ordnance Survey data supplied under license from King’s College London.
- 2 During this research coin profiles were created for individual findspots in the micro-level case studies which produced 20 or more identifiable coins. These were compared with Reece’s national average for coin loss, based on 140 excavated sites which included a wide range of Romano-British site types. Walton (2012) has since produced an alternative set of national and regional means, based upon both PAS and excavation data, which are less biased towards the excavated urban, military and high status sites than Reece’s original sample. Whilst Walton’s new means are broadly similar to Reece’s, they would undoubtedly compare more directly to those produced by the metal detector coin assemblages in this study (i.e. rural sites), enabling nuances between coin profiles produced by rural sites to be better recognized and further explored.

Chapter 4

A Regional Case Study from Wiltshire

Introduction

This chapter presents a regional case study from Wiltshire, included as an example of a county with a Romano-British settlement pattern well represented by Roman ‘small towns’ and villas, and an area that has seen fairly extensive archaeological investigation. An assessment of the contribution that PAS data can make to the understanding of Romano-British settlement in the county is explored in a number of ways. Following an overview of Wiltshire’s Romano-British settlement pattern, the general distribution of PAS data is considered against contemporary land use and the distribution of HER data for the Roman period. This section investigates broad patterns of Romano-British settlement in Wiltshire, and assesses the extent to which the distribution of data reflects modern recovery bias as well as patterns of ancient settlement. The next section categorizes PAS findspots in Wiltshire, allowing identification of the number of potential Romano-British sites represented by PAS data, including those not previously recorded on the county’s HER. This is followed by a study of the artefact composition of PAS sites in the county, allowing general observations to be made on the types of find represented at Roman PAS findspots, as well as the identification of sites which might warrant more detailed investigation. Drawing upon the results of the previous sections, the concluding part of the chapter presents localized analyses of sites identified as being of particular interest in the parishes of West Lavington and Market Lavington and Great Bedwyn.

Romano-British settlement in Wiltshire

Wiltshire has a rich archaeological record and is particularly well known for its well-preserved prehistoric remains, with famous examples at Stonehenge and Avebury. Whilst such sites eclipse those of later periods in terms of the amount of attention they receive, Wiltshire is nonetheless well represented by evidence from the Roman period. However, in common with most other parts of Britain, an emphasis has traditionally been placed on particular aspects of Roman settlement: the towns, villas and temples. This is partly because Wiltshire contains nationally important remains of these site types, particularly the villas at Box (Hurst *et al.* 1987), Littlecote (Walters and Phillips 1979) and Great Bedwyn (Hostetter and Howe 1997), and temples or shrines such as Nettleton (Wedlake 1982) and Cold Kitchen Hill; but it is also because such sites have often been considered to be the most interesting by archaeological researchers. It is telling, for example, that a recent synthesis of Romano-British Wiltshire did not contain a chapter specifically dedicated to low-status rural settlement in the county (Ellis 2001), despite the wealth of evidence. Notable work in this area has, however, been undertaken by the likes of Bowen and Fowler who investigated rural settlement on the Marlborough Downs (Bowen and Fowler 1966; Fowler and Blackwell 1998; Fowler 2000). The Royal Commission’s recent surveys of the well-preserved settlements on Salisbury Plain (McOmish *et al.* 2002), augmented by the recent surveys and excavations undertaken by the University of Reading (Fulford *et al.* 2006), have also been extremely important. The increasing number of archaeological interventions undertaken ahead of development over the

past forty years, many of which have recovered evidence for low-status rural dwellings (e.g McKinley and Heaton 1996; Fitzpatrick and Crockett 1998; Lovell 1999; McKinley 1999), have also helped to address this imbalance. Compared to the other regional case studies, the evidence for a wide range of aspects of Romano-British settlement in Wiltshire is extremely good.

The county falls within the suspected areas of three Roman *civitates*. These *civitates* are thought to be based on the territories of the pre-conquest tribes of the area: the *Durotriges* in the south, whose territory also extended into Dorset; the *Dobunni* in the west and north, extending into Somerset and Gloucestershire; and the *Atrebates* in the east, with territory extending into modern Hampshire and Berkshire (Cunliffe 1993, 208; Corney 2001, 6). A further *civitas*, based on the territory of the *Belgae*, is suggested by some to extend from Hampshire across central Wiltshire (Walters 2001), although its extension into the county is considered controversial (Corney 2001, 6).

There are no Roman towns of *civitas* capital status or higher in Wiltshire. However, there are several major towns within adjacent counties, and Wiltshire's Romano-British settlement pattern must be considered in relation to these sites (Fig. 12). These include: to the east in Hampshire, the *civitas* capital of the *Atrebates*, *Calleva Atrebatum* at Silchester and *Venta Belgarum* (Winchester), *civitas* capital of the *Belgae*; to the south west lies *Durnovaria* (Dorchester), believed to be the *civitas* capital of the *Durotriges*; immediately north of the county boundary is *Corinium Dobunnorum* (Cirencester), the *civitas* capital of the *Dobunni*; and immediately to the west, in Somerset, is the religious centre at Bath, *Aquae Sulis*. It is likely that many of the Romano-British sites and landscapes in Wiltshire had a relationship to some of these towns, particularly in the west and north where parts of the county are within the immediate hinterlands of *Aquae Sulis* and *Corinium Dobunnorum* (Draper 2006, 9). The other *civitas* capitals may perhaps only have been visited infrequently by most occupants of Romano-British Wiltshire. There are, however, a number of 'small towns' or 'local centres' within the county that are likely to have performed local market, religious and industrial functions, and may have been involved in local administration as *pagus* centres in some cases (Burnham and Wachter 1990, 39; Millett 1990, 150). The eight known 'small towns' of Wiltshire range from those with evidence for planning in the form of gridded systems of streets such as at Wanborough (Burnham and Wachter 1990, 162; Corney 2001), Mildenhall (Burnham and Wachter 1990, 150; Corney 2001) and possibly Stratford-sub-Castle (Corney 2001) to sites like Easton Grey, which appears to have developed as a ribbon settlement along the line of the road network (Corney 2001, 26).

Wiltshire is well represented by villas, and the county is within an area of the country that saw a floruit of villas in the 4th century AD, some of which are amongst the grandest in Britain (Scott 2000, 81; Walters 2001, 128). A notable absence of villas from the area of the Salisbury Plain has been seen by some as evidence for an imperial estate, based on the idea that land was let to tenants who occupied non-villa settlements. However, there is little evidence to suggest that imperial estates are archaeologically

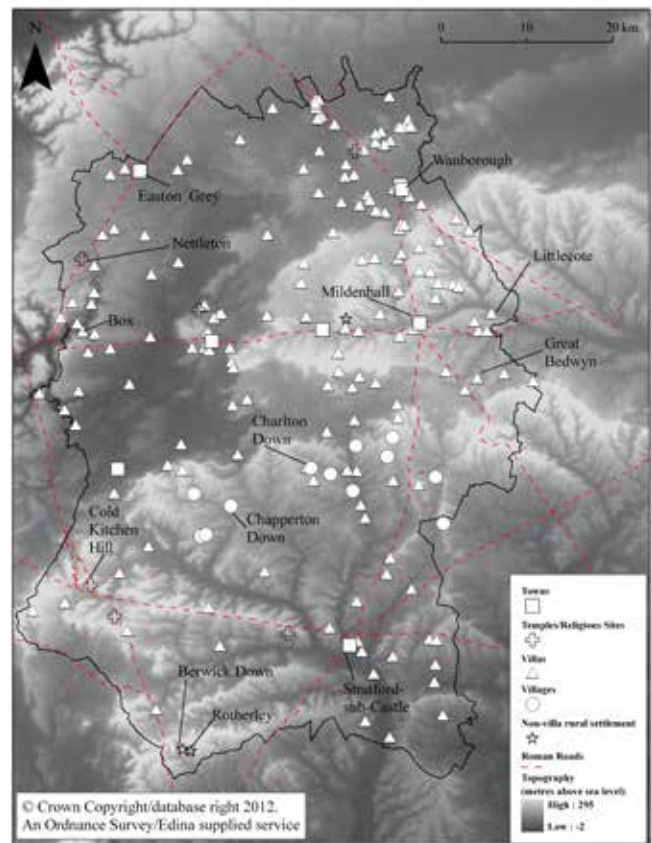


Figure 12 Sites in Wiltshire mentioned in the text

distinguishable from any other type of land ownership, and there are a number of areas within the 'villa rich' area of lowland Britain that are not well represented by villas (Millett 1990, 121–2). Although landownership is unclear, the extremely well-preserved settlements on the Salisbury Plain are amongst the best evidence for rural settlements in Britain. At least 11 'villages' survive as earthworks on the plain, which seem to have continued and expanded from late prehistoric settlements (King 2004, 356). These include compact villages which can consist of hundreds of hut platforms with networks of streets set within fieldsystems, as at Charlton Down, and linear settlements which have developed alongside streets, such as Chapperton Down (McOmish *et al.* 2002, 87–108; Fulford *et al.* 2006). These sites are generally distinguished from the urbanized small towns because they are set within an extensive agricultural landscape with economies which appear to have been predominantly rural (Corney 2001, 5).

Whilst the best-preserved evidence for such rural settlements is found on Salisbury Plain, it is also documented from many other parts of Wiltshire. Nucleated rural settlements are also recorded from the Grovely Ridge, between the Wyle and Nadder valleys in the south west of the county (Corney 1989, 116–17). The Marlborough Downs also contain additional evidence for 'villages', but also evidence for smaller groups of huts which are better seen as farmsteads or hamlets, set within systems of fields (at West Overton for example, where Romano-British agricultural settlements succeeded an enclosed Iron Age settlement located around 200m to the north (Bowen and Fowler 1966, 57; Fowler 2000)). These are best known where they have survived as upstanding earthworks. At Berwick Down, for

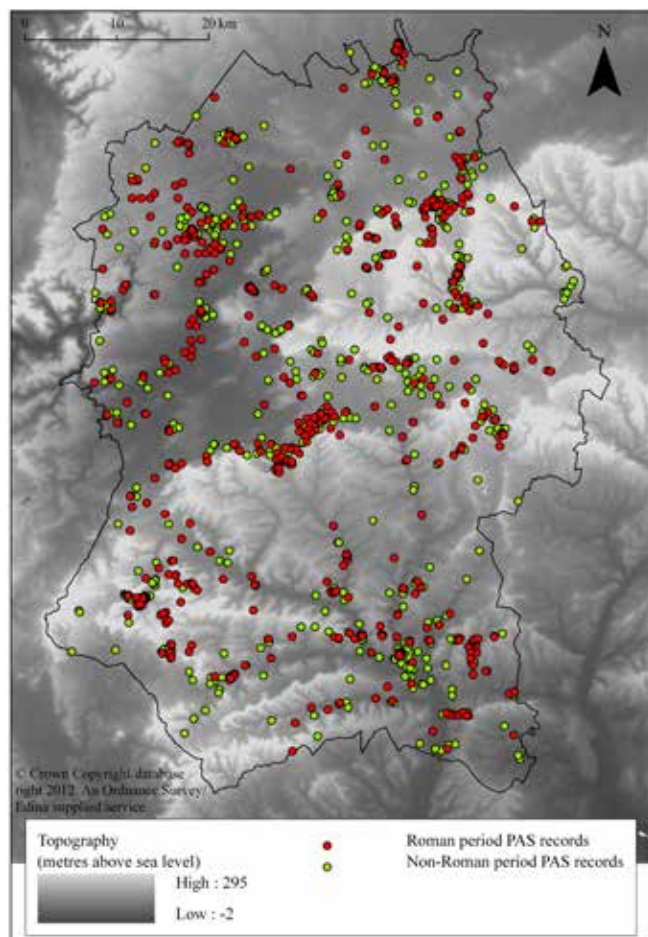


Figure 13 PAS Roman period data from Wiltshire against a control dataset of data of other periods

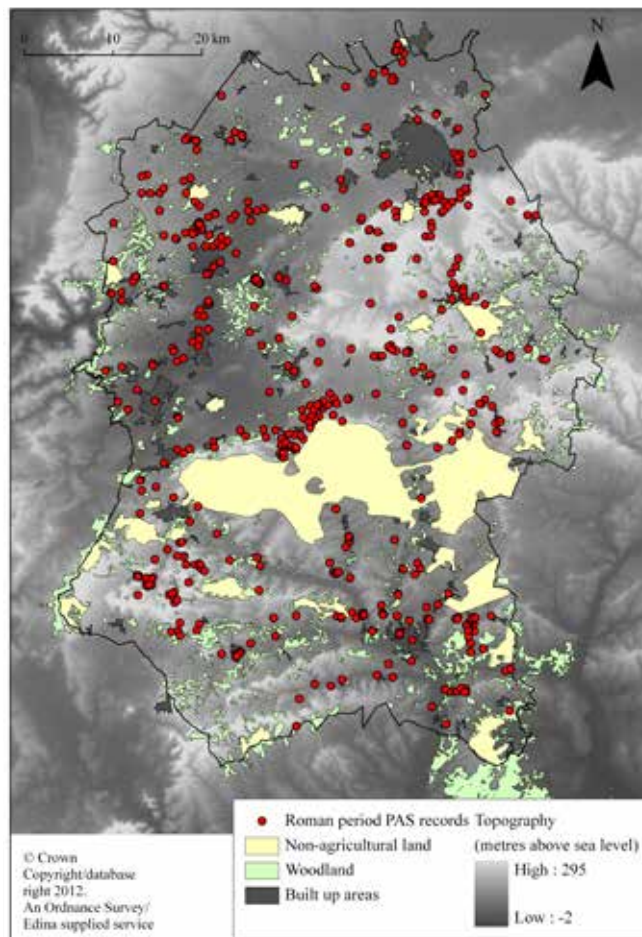


Figure 14 Distribution of PAS Roman data from Wiltshire against recovery constraints

example, five or six farmsteads are enclosed by an oval ditch (Draper 2006, 15). Pitt Rivers's excavation of a farmstead at Rotherley remains important, having demonstrated continuity of settlement location from the late Iron Age into the Roman period (Bowen and Fowler 1966, 46). Indeed, the general pattern for small rural settlements seems to have been one of relatively little change between the Late Iron Age and Roman periods (Draper 2006, 15).

The distribution of PAS data in Wiltshire

The final PAS dataset for Wiltshire was downloaded on 18 March 2009. After cleaning of the data there were 4,767 records dating to the Roman period. Included within these figures were 117 records of late Iron Age date and 11 records from the early medieval period which possibly date from as early as the 5th century AD.

Figure 13 plots the Romano-British period PAS data from Wiltshire alongside an additional dataset comprising PAS data from all other periods. The two plots are broadly very similar and there are few areas represented by finds of non-Roman date where Roman finds have not been reported. This might suggest continuity in the historic settlement pattern, with particular areas consistently favoured over others, but it is also likely that the distribution of the data substantially reflects modern recovery constraints and is more representative of where metal detector users search than the genuine distribution of ancient settlement. **Figure 14** plots the Roman period PAS

data alongside major recovery constraints. The absence of data from the urban sprawl of Swindon in the north east, and the non-agricultural danger zone of the Salisbury Plain military training area are particularly clear. Quantitative analysis of the density of PAS data by Natural England's 'Natural Areas' indicates that there are further nuances not immediately recognizable within the general distribution. **Table 6** demonstrates how of the eight distinct Natural Areas in Wiltshire, the Roman PAS data are densest in the Cotswolds, the Thames and Avon Vale and the South Wessex Downs. Whilst a map of the HER dataset for the county suggests a more even distribution (**Fig. 15**), analysis of the density in different Natural Areas also reveals nuances in this data (**Table 7**): here it is the Midvale Ridge and the Marlborough Downs where the density is greatest.

This discrepancy is easily explained. The Midvale Ridge is occupied by Swindon, where much archaeological intervention has occurred ahead of development, creating correspondingly high numbers of HER records. The density of PAS data is low here because urban sprawl restricts the availability of land for searching.

The fairly high density of PAS data on the South Wessex Downs may seem surprising, as this area contains a large number of scheduled monuments which restrict searching (**Table 8**), whilst a large part of Salisbury Plain is offlimits to detector users as it is owned by the military. However, a kernel density analysis undertaken in GIS (an approach discussed in Chapter 3, p. 21) indicates that very large

Natural Area	Density of PAS finds per km ²	Density of scheduled monuments	Number	Density
Cotswolds	1.92	South Wessex Downs	878	0.68
Thames and Avon Vale	1.71	Marlborough Downs	353	0.56
South Wessex Downs	1.52	New Forest	8	0.21
Marlborough Downs	0.86	Midvale Ridge	11	0.16
Midvale Ridge	0.59	Wessex Vales	34	0.16
Wessex Vales	0.16	Cotswolds	35	0.13
New Forest	0.02	Thames and Avon Vale	117	0.13
Hampshire Downs	0	Hampshire Downs	14	0.05

Table 6 Density of PAS data by Natural Area

Natural Area	Density of HER records per km ²
Midvale Ridge	1.95
Marlborough Downs	1.09
Thames and Avon Vale	0.74
South Wessex Downs	0.57
Cotswolds	0.45
Hampshire Downs	0.24
Wessex Vales	0.19
New Forest	0.05

Table 7 Density of HER data by Natural Area

quantities of finds have been recovered from a small number of locations (**Fig. 16**).

In contrast, a kernel density analysis of the HER data shows them to be less affected by small numbers of areas of activity with very high numbers of records (**Fig. 17**). Comparison of the two density analyses clearly demonstrates that the areas with the greatest density of PAS data are generally those not so well represented by HER data, and may therefore have significant potential for enhancing understanding of particular areas.

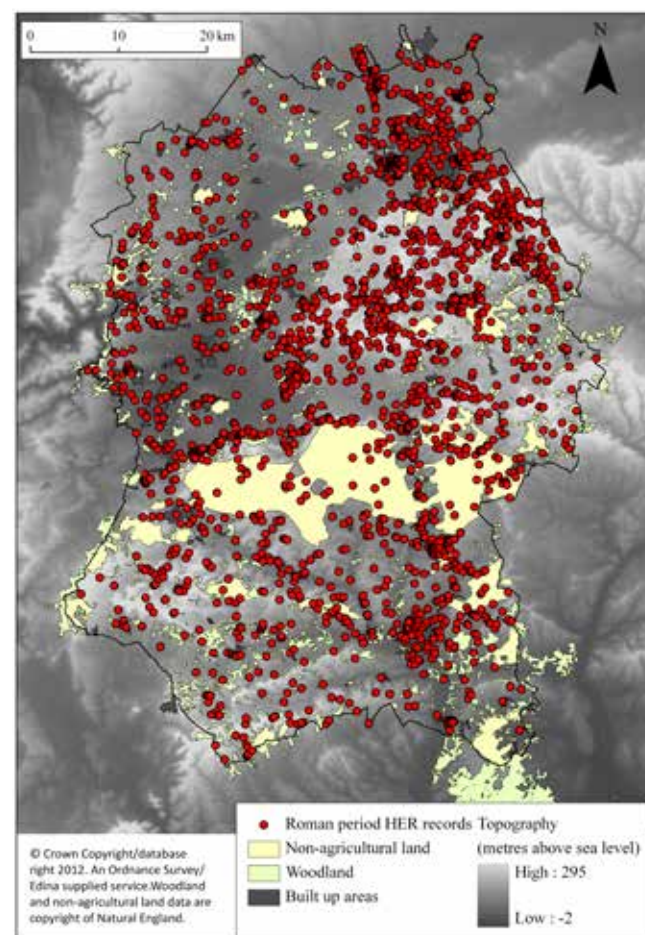
The reasons for the location of these very dense clusters of PAS data are not immediately apparent. Some clearly correspond to the Roman road network, and may reflect the decision by detector users to search areas where they perceive Roman finds to be likely. However, results of the questionnaires given to metal detector users (see Appendices I and II) suggest that gaining permission is a more significant factor than the presence of known archaeological sites in choosing where to detect and this is perhaps supported by the fact that some of the clusters appear to be associated with neither the Roman roads nor the major Roman sites in the county.

Figure 16 shows how some of the major clusters of PAS data occur immediately adjacent to built-up areas, perhaps suggesting that the high numbers of finds in these places are made by people residing in nearby villages or towns.

Table 8 Density of scheduled monuments in Wiltshire by Natural Area

Notable clusters occur immediately adjacent to Chiseldon, Derry Hill, Kempsford, Salisbury, Warminster and West Lavington. The high numbers of finds from these locations may reflect the ease with which local metal detector users can get to the fields, and therefore the frequency with which they detect. Where addresses are provided on the PAS database it is possible to explore this further. At West Lavington, for example, almost all of the finds have been recovered by one finder who lives in the parish. This is also the case at Warminster. At Derry Hill, 10 finders are responsible for the finds on the PAS database, nine of whom

Figure 15 Map showing distribution of Roman HER records in Wiltshire



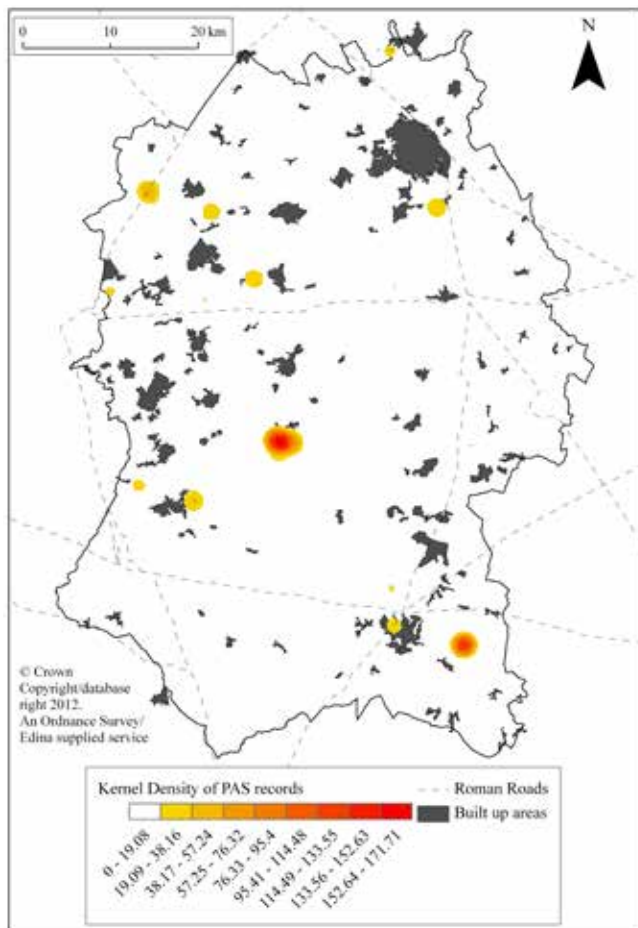


Figure 16 Kernel density analysis of PAS data from Wiltshire

had travelled from Swindon. However, 56 per cent of the finds here were recovered by one individual: the only finder to reside in the parish. At Salisbury, however, the finds were recovered by eight individuals. Addresses are available for only four of these people, but of these only one lives in Salisbury itself, and two are from different counties. It is notable that of these clusters, it is Salisbury, the site of a Roman ‘small town’ and important medieval settlement, which appears to have drawn detector users from furthest afield. Clusters in locations where Roman sites are less

Table 9 Table showing ‘new’ and previously known findspots according to findspot category (discussed in Chapter 3)

Findspot type	Located at least 200m away from nearest HER record	Within 200m of HER record	Total
Single metal objects	145	26	171
Small assemblages	82	15	97
Medium assemblages	30	9	39
Large assemblages	31	11	42
Non-metal assemblages	36	14	50
Total	324	75	399

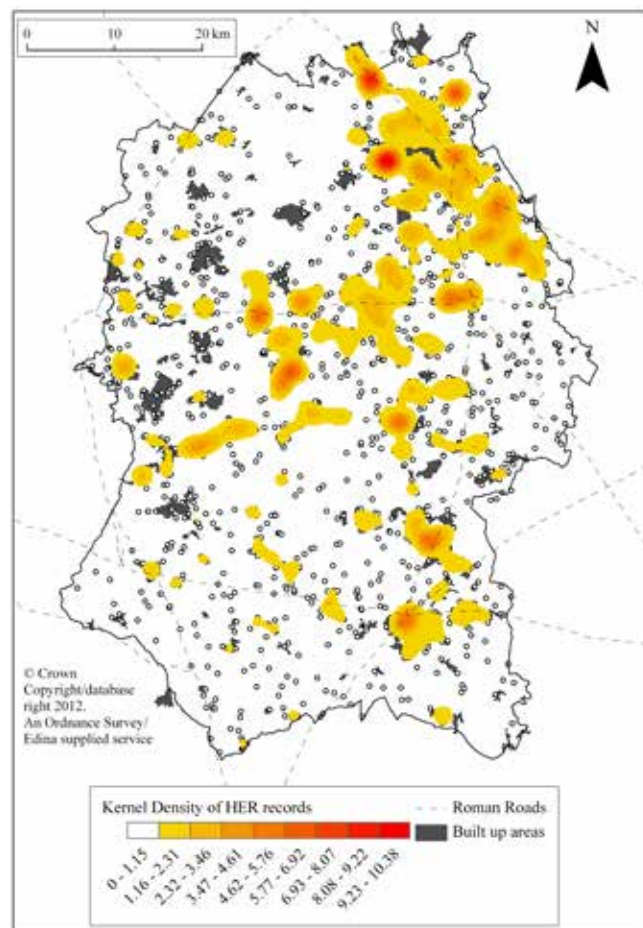


Figure 17 Kernel density analysis of HER data from Wiltshire

widely known seem to be better represented by finds recovered by local finders.

Categorization of PAS findspots in Wiltshire

The clusters shown in **Figure 16** represent a small number of findspots that dominate a density analysis of the PAS data. Yet it is important not to underestimate the importance of other findspots which are less susceptible to kernel density analysis due to smaller quantities of finds. The methodology set out in Chapter 3 has allowed recognition of 399 individual findspots for Roman PAS data in Wiltshire: i.e. single finds or groups of finds recovered from within 200m of one another (**Table 9**).

Of these findspots, 324 (81.2 per cent) are located at least 200m from the nearest HER record, and so are considered here as previously unrecorded activity (**Table 9**). Although single and small groups of finds may reflect settlement they may also represent activity within the wider landscape and only findspots with groups of artefacts of medium or large size can convincingly be argued as representative of settlement. Findspots of exclusively non-metal finds may also potentially relate to settlement, although there is also the possibility that such finds relate to wider agricultural activity such as manure scatters. The combined medium and large groups of PAS data may relate to 81 potential sites. 61 (75.3 per cent) of these are previously unrecorded, based on the distribution of the HER data. 426 individual Roman sites are recorded on the NMR from Wiltshire, ranging from small rural settlements to towns. The 61 new sites

Findspot	C	D	Cer	O	Total	Findspot	C	D	Cer	O	Total
Alton Central Large Group 11		5	0	3	19	Ogbourne St George North 11 West 1		1	0	0	12
Alton Hoard West	1	0	0	0	1	Ogbourne St George North 15 West 2		26	10	6	57
Box West	58	25	0	2	85	Pitton and Farley North 4	31	3	2	0	36
Box Central	0	13	0	3	16	Pitton and Farley South East	12	0	0	0	12
Bremhill	9	2	0	3	14	Salisbury Central Large Group	112	2	0	1	115
Brockenborough South East	10	2	0	0	12	South Newton West	16	7	0	0	23
Broughton Gifford South	15	0	2	0	17	St Paul Malmesbury Without North East 2	39	0	0	0	39
Calne Without Central	89	6	46	6	147	Upton Scudamore West	27	29	38	5	99
Chilseldon Central 1	97	20	0	4	121	Wanborough North West 2	10	1	0	0	11
Chiseldon Central 2	30	1	0	1	32	Wanborough West	16	0	0	1	17
Downton North East 5	24	6	0	2	32	West Dean East	14	0	0	0	14
Downton North East 7	14	7	0	0	21	West Lavington 7	212	12	3	8	235
Durnford West	71	10	1	2	84	West Lavington 9	67	0	0	0	67
Great Bedwyn 8	43	6	0	3	52	West Lavington 8	5	3	0	3	11
Grittleton West Central	111	14	84	3	212	West Lavington 3	55	3	0	0	58
Kington Langley North	38	0	97	0	135	West Lavington 4	451	14	33	3	501
Kington St Michael	5	6	6	4	21	West Lavington 14	30	6	58	3	97
Lacock Central 1	33	12	6	9	60	West Lavington 12	58	10	0	3	71
Lacock Central 2	20	0	0	0	20	West Tisbury	9	2	0	1	12
Market Lavington 1	24	0	0	2	26	Winterbourne Stoke North	16	16	0	4	36
Marston Maisey West	40	2	49	3	94	Wooton Rivers	19	0	0	0	19

Table 10 Summary of assemblage composition for large PAS findspots (11 metal artefacts or more) in Wiltshire. C = coins, D = dress accessories, Cer = ceramics, O = other

represented by medium and large groups of metalwork recorded by the PAS therefore represent a potential increase of 14.3 per cent, along with enhanced information for a further 4.7 per cent.

The composition of medium and large groups of PAS data in Wiltshire

Tables 10–11 summarize the composition of medium and large groups of metalwork. Coins dominate most assemblages, but are absent from a small number. Some

findspots characterized by fairly low numbers of metal artefacts are also well represented by non-metal finds, and low quantities of metalwork do not necessarily reflect low levels of activity. Three coins and three dress accessories have been recorded from Pewsey South, for example, yet ceramics, quernstones, potboilers and building material are suggestive of domestic settlement at this location. Similarly, Pitton and Farley South West produced only six items of metalwork, but over 500 pottery sherds and pieces of building material were recovered.

Findspot	C	D	Cer	O	Total	Findspot	C	D	Cer	O	Total
Alton East	4	3	0	0	7	Kingston Deverill South West 4	5	0	0	0	5
Berwick Bassett West	7	0	0	0	7	Kingston Deverill South West 3	9	0	0	0	9
Bishops Canning	5	0	0	0	5	Lacock North West	2	4	0	0	6
Bowerchalke South	10	0	0	0	10	Liddington North East	4	0	0	2	6
Bratton	6	0	4	1	11	Liddington South	7	0	0	0	7
Bromham Central	5	0	0	0	5	Liddington West	7	0	0	0	7
Broughton Gifford Central	5	0	0	0	5	Lydiard Millicent	5	0	4	9	18
Great Bedwyn 1	0	7	0	0	7	Lydiard Tregoze	6	0	0	0	6
Chippenham Central	3	0	4	2	9	Marlborough	4	0	0	1	5
Chirton North	2	5	1	1	9	Pewsey South	4	3	4	8	19
Downton North East 4	5	1	0	0	6	Pitton and Farley North 1	4	3	0	0	7
Durnford North 1	7	0	0	0	7	Pitton and Farley South West	4	1	551	9	565
Easterton Central 2	4	1	0	1	6	Sutton Verney East	6	0	0	0	6
Everleigh Central	7	1	0	0	8	Urchfont Central 2	7	0	1	0	8
Great Bedwyn 3	0	4	0	2	6	West Lavginton 13	5	0	0	0	5
Grittleton Central	6	0	0	0	6	West Lavington 6	0	5	0	3	8
Grittleton East	6	3	16	1	26	West Lavington 5	0	3	0	2	5
Heytesbury South West	2	3	0	0	5	Westbury East	8	2	11	0	21
Kingston Deverill North West Iron Age	5	1	0	0	6	Wroughton East 3	5	2	0	0	7
						West Ashton	4	3	0	0	7

Table 11 Summary of assemblage composition of medium PAS findspots (5–10 metal artefacts). It should be noted that the category ‘other’ includes non-metal artefacts, which takes the total number of finds above 10 in some cases. C = coins, D = dress accessories, Cer = ceramics, O = other

A small number of case studies have been selected from the 81 ‘sites’ for more detailed analysis. Before this is undertaken however, it is worth considering in very general terms how they can contribute to some of the themes raised in Chapter 2. For instance, 45 of the ‘sites’ represented by PAS data occurred within 10 kilometres of a known Roman town, whereas 36 did not (**Fig. 18**). Those within relatively close proximity to the small towns perhaps have the potential to contribute to an understanding of the relationship between town and country in Roman Britain, and detailed analysis of the assemblages from these findspots might enhance understanding of the wider hinterland of some local centres. Where these ‘sites’ occur at some distance from the known towns, this might also provide information about areas that were more significant in the Roman period than currently recognized. For example, a cluster of medium-sized assemblages (Kingston Deverill North West, Kingston Deverill South West 3 and Kingston Deverill South West 4) occur around the junction of two Roman roads in the south west of the county at Kingston Deverill (**Fig. 18**).

This is the only road junction in Wiltshire where a Roman town is not known (although the important shrine at Cold Kitchen Hill is located approximately 1km to the north west). Although there is no direct evidence, it is tempting to

hypothesize the presence of a local centre at this road junction, and the cluster of PAS findspots perhaps relates to activity in its immediate hinterland.

Whilst it has been demonstrated that the overall distribution of PAS data in Wiltshire is largely conditioned by contemporary factors, the distribution of potential sites may suggest possible routes for unknown Roman roads in the county. Medium and large groups of PAS finds occur along the line of the Fosse Way in the north west of the county, and along the road from Salisbury to Mildenhall in the east. Other roughly linear distributions of PAS data might allow very tentative suggestions to be made about possible unrecorded roads or trackways between small towns, some of which have been suggested by red dashed lines in **Figure 18**. Such networks must of course remain entirely conjectural until supported by further evidence.

Comparison of the relative proportions of different categories of artefacts allows recognition of potentially interesting or unusual findspots. Based on the 42 large assemblages, coins accounted for an average of 79.2 per cent of finds, dress accessories 15.7 per cent and other finds 5.6 per cent (ceramics were excluded from this calculation as they are not collected by all detector users). At Ogbourne St George however, 55.3 per cent of the finds were dress accessories. Winterbourne Stoke North, Upton Scudamore West and

Kingston St Michael East Central also produced high proportions of dress accessories, whilst Box Central produced no coinage whatsoever. These variations are interesting and might repay detailed investigation. However, without communication with the finder(s), it is unclear whether the differences in the composition of these assemblages represents variation in ancient activity or choices made by metal detector users as to what to collect and report (see pp. 18–19). Whilst many parishes with findspots represented in **Tables 10–11** might repay detailed analysis, West Lavington and Great Bedwyn have been singled out for detailed investigation in the remainder of this chapter.

Great Bedwyn has been selected partly because it contains an interesting assemblage, including a religious figurine, and also because its close proximity to the villa at Castle Copse presents an opportunity to examine a potential association between a PAS findspot and an excavated villa. West Lavington has been selected because there are several findspots with large quantities of finds within the parish (and the adjacent parish, Market Lavington), and it therefore serves as a useful case study to explore the distribution of PAS data over a local landscape. These case studies also present an opportunity for contrasting two areas where PAS data differ in both extent and quality. The West Lavington area is considered first.

Localized case study: West Lavington

West Lavington and Market Lavington are located in the centre of Wiltshire and Salisbury Plain extends into the southern parts of both parishes. These two parishes therefore have an area of upland that fall within the South Wessex Downs, and an area of lower terrain within the Thames and Avon Vale (Natural England 2009b). The built up parts of the parishes are an almost continual amalgamation of the villages of Littleton Pannell, West Lavington and Market Lavington. These modern villages are located within the northern lowland parts of the parishes, standing at the head of the Till Valley, on the watershed between the Bristol and Salisbury Avon river systems (Chandler 2003).

A further village at Gore on Salisbury Plain was occupied in the medieval period, but apparently deserted in the 16th century. This and the remaining villages are believed to have had Saxon origins (Chandler 2003), and at Market Lavington excavations have produced evidence for continuous occupation from the late Roman period until the establishment of the medieval town, including an inhumation cemetery in use from the late 5th to 6th centuries AD (Williams and Newman 1998; 2006; Draper 2006, 155). The only other direct evidence for Romano-British settlement comes from an excavation at Littleton Pannell Manor House, undertaken by Dauntsey's Primary School in the 1940s (Grinsell 1957, 120). These excavations uncovered a 2nd- to 4th-century AD settlement, which has been tentatively interpreted as a possible villa on the basis of evidence for a rough paved floor and wall plaster (Scott 1993, 208). Aside from the excavated material, Cunnington noted how the number of casual finds discovered suggested that there was a 'British village' site somewhere on West Lavington Down, but that the exact location was unknown

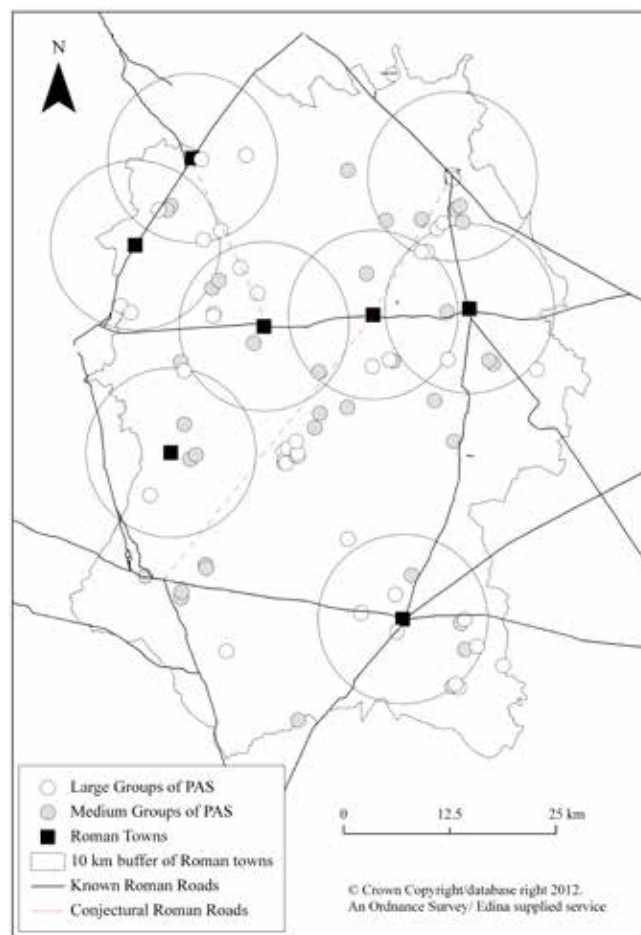


Figure 18 Proximity of large and medium PAS findspots to Roman towns with conjectural Roman roads marked

(Cunnington 1932, 195). As well as the evidence for settlement from the two excavations, other records on the HER refer to casual finds of pottery and metalwork. The latter are derived from a report made by the FLO and the records on the HER and PAS databases therefore refer to the same material. Situated immediately to the south of the parish are the prehistoric and Romano-British landscapes of Chapperton Down and Orcheston Down: two of the group of Romano-British 'villages' which survive as earthworks on Salisbury Plain (Fulford *et al.* 2006; McOmish *et al.* 2002).

The substantial quantity of Roman period PAS data from West Lavington and Market Lavington has almost exclusively been reported by a single metal detector user: one find was reported by another individual. This finder spends a large amount of his time detecting, has permission to search over a wide area and reports all of his finds to the FLO (Katie Hinds pers. comm.). The spatial resolution is very good and the majority of finds are recorded to an eight figure grid reference. However, notes made by the FLO indicate that these grid references refer to the centre of the fields in which the finds were recovered, so the finds evidently have a slightly wider distribution than their grid references suggest.

Figure 19 plots the distribution of PAS and HER data in these parishes in relation to local topography, built up areas and woodland. The PAS data predominantly occur in the fields to the south of the modern villages, their distribution clearly affected by a wood in the centre of the

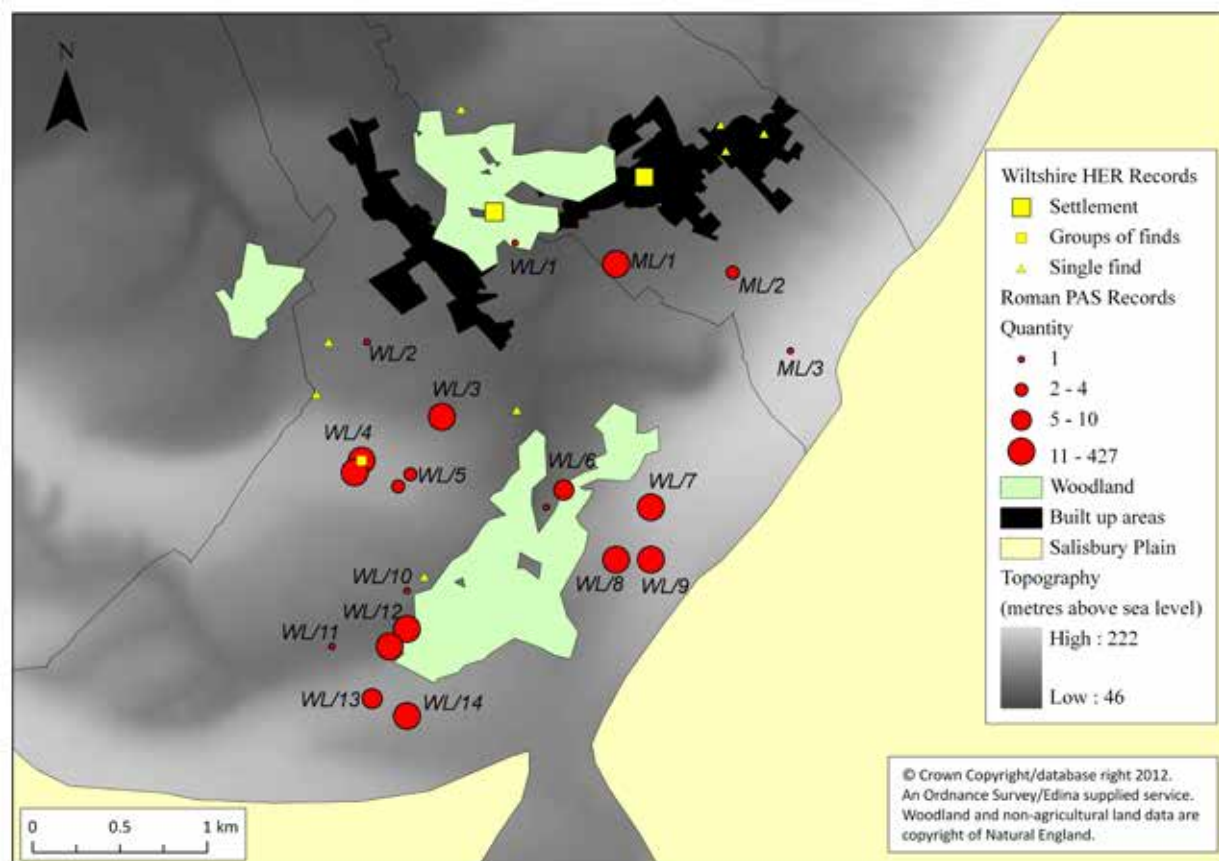


Figure 19 Distribution of HER and PAS data in West Lavington and Market Lavington

Table 12 Summary of finds from each findspot at West Lavington and Market Lavington

Findspot name	Assemblage type	Coins	Dress accessories	Other metal	Ceramics	Other non-metal	Total metalwork	Total
WL/4	Large group	451	14	1	33	2	466	501
WL/7	Large group	212	12	4	3	4	228	235
WL/14	Large group	30	6	0	55	6	36	97
WL/12	Large group	58	10	3	0	0	71	71
WL/9	Large group	67	0	0	0	0	67	67
WL/3	Large group	55	3	0	0	0	58	58
ML/1	Large group	24	0	2	0	0	26	26
WL/8	Large group	5	3	3	0	0	11	11
WL/6	Medium group	0	5	3	0	0	8	8
WL/13	Medium group	5	0	0	0	0	5	5
WL/5	Medium group	0	3	2	0	0	5	5
ML/2	Small group	1	2	0	0	0	3	3
WL/11	Single find	0	1	0	0	0	1	1
WL/2	Single find	0	1	0	0	0	1	1
WL/1	Single find	1	0	0	0	0	1	1
ML/3	Single find	0	1	0	0	0	1	1
WL/10	Single find	0	1	0	0	0	1	1

parish and Salisbury Plain in the south. The two excavated settlements recorded on the HER both occur within the built up areas/woodland, so the PAS data provide information on parts of the parish that have seen the least archaeological activity.

Figure 19 shows 17 distinct findspots of metalwork in the two parishes, whilst **Table 12** provides a summary of the finds from each location. The findspots are distributed over an area of approximately 300 hectares, and given that even the largest of the villages known from Salisbury Plain is only 26 hectares in extent (McOmish *et al.* 2002, 88–100), it seems likely that several settlements are represented. The location of the findspots suggests that settlement was focused on the hillsides overlooking the valley, a pattern also seen at the Romano-British rural sites at Overton Down on the Marlborough Downs (Fowler and Blackwell 1998, 67), and Coombe Down and Chisenbury Warren on Salisbury Plain (McOmish *et al.* 2002, 88, 98; Fulford *et al.* 2006, 201–2).

One of the principal limitations of haphazardly gathered unstratified finds is the lack of information they provide on morphological aspects of settlement and it is immensely difficult to discern the types of site possibly represented by these clusters.

The apparently discrete and fairly closely defined distributions perhaps suggest that the findspots are more likely to represent individual farmsteads rather than villages, although the fact that grid references were taken from the centre of the fields from which finds were recovered limits the confidence with which such interpretations can be made.

Whilst only findspots with large or medium groups of finds can realistically be seen as evidence for settlement, the additional small groups and single finds suggest a landscape that saw widespread activity. It is also possible that some of the findspots represented by lower numbers of finds may themselves represent settlement, and further discoveries may allow their reclassification as potential sites in the future.

Whilst the morphologies of the potential sites represented by PAS data remain unclear, the large quantities of coins recovered from many of them means that they are at least able to provide some chronological information. By utilizing Reece's (1995) method for comparing coin profiles from different sites, it is possible to explore similarities and differences between findspots, based upon their evidence for coin loss (see Chapter 3, pp. 26–7).

Whilst Reece's national mean value for coin loss is normally used as a benchmark against which to compare coin loss at individual sites, Roman coin loss in Wiltshire has seen attention from Moorhead (Moorhead 2001b; Moorhead 2001a), and more recently Walton (2010; 2012), both of whom produced average coin profiles for coin loss in Wiltshire. Moorhead's study was based on coins drawn from a variety of sources, including excavations and casual finds (including metal detector finds, although these were limited as Moorhead's study was undertaken before the PAS was established in Wiltshire), whereas Walton incorporated all finds recorded by the PAS and excavated evidence (and also introduced a 22nd period for post-402 coins). The coin profiles from the findspots at West Lavington and Market Lavington are compared here with Moorhead and Walton's mean profiles for Wiltshire, as these are clearly more

Date (AD)	Reece period	ML/1	WL/12	WL/3	WL/9	WL/7	WL/4
–41	1	0	0	0	0	4	3
41–54	2	0	0	1	1	2	0
54–69	3	0	0	0	1	1	0
69–96	4	0	0	0	0	1	0
96–117	5	0	0	0	0	0	3
117–38	6	0	0	0	0	0	1
138–61	7	0	0	0	0	0	1
161–80	8	0	0	0	0	0	0
180–93	9	0	0	0	0	0	0
193–222	10	0	0	0	0	0	0
222–38	11	0	0	0	0	0	3
238–60	12	0	0	0	1	0	0
260–75	13	6	0	1	8	11	18
275–96	14	2	0	2	0	6	17
296–317	15	1	0	0	0	2	5
317–30	16	0	1	1	2	3	13
330–48	17	5	4	13	7	39	75
348–64	18	2	2	4	4	12	27
364–78	19	4	19	10	35	79	122
378–88	20	0	0	0	1	0	1
388–402	21	0	0	1	0	3	8
402+	22	0	0	0	0	0	0
Total with ids		20	26	33	60	163	297
Illegible		4	32	22	7	49	154
Total coins		24	58	55	67	212	451

Table 13 Summary of coinage from findspots in West Lavington and Market Lavington for which coin profiles have been produced

relevant than Reece's national mean (I am grateful to Philippa Walton for providing me with her refined data set for Roman coins on the PAS database and for her general statistics on Wiltshire's Roman coinage). Findspots were considered to require at least 20 identifiable coins in order to facilitate meaningful statistical comparison between sites, and based on these criteria, six of the findspots in West Lavington and Market Lavington produced enough identifiable coins for analysis to be undertaken (**Table 13**). Coin profiles for these six sites are presented in **Figures 20–1**, presented against Moorhead and Walton's respective Wiltshire means. When reading the profiles, a sharp downward movement indicates that the level of coin loss for that particular period is significantly below that of the mean, and vice versa. A relatively straight line indicates that coin loss is around the same level as the Wiltshire mean. It is important to note that it is not the position of the points above or below the x-axis that convey the behaviour of the different groups against the Wiltshire mean, but the relative trajectory of the line (Reece 1995, 188). See **Table 13** for a key to dates for Reece numbers.

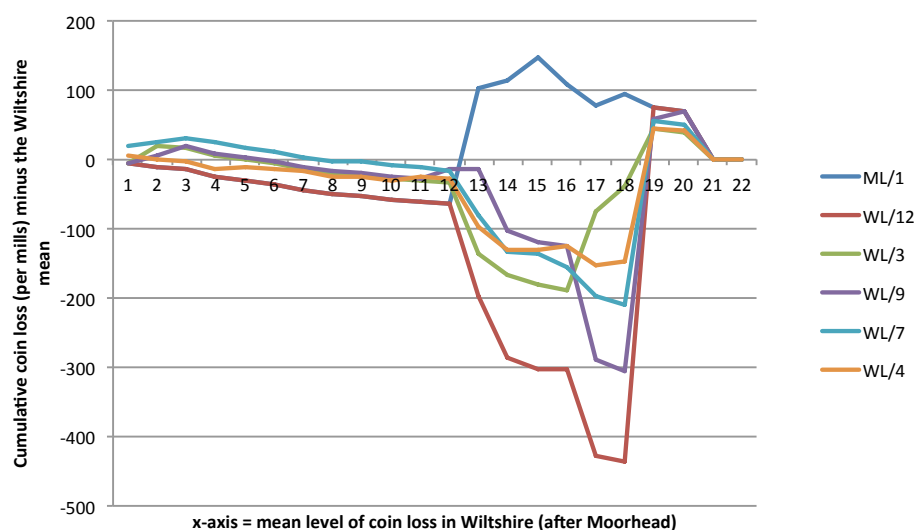


Figure 20 Coin profiles for the six Lavington findspots showing coin loss against Moorhead's Wiltshire Mean (x-axis). See Reece 1995 for a full discussion of the method

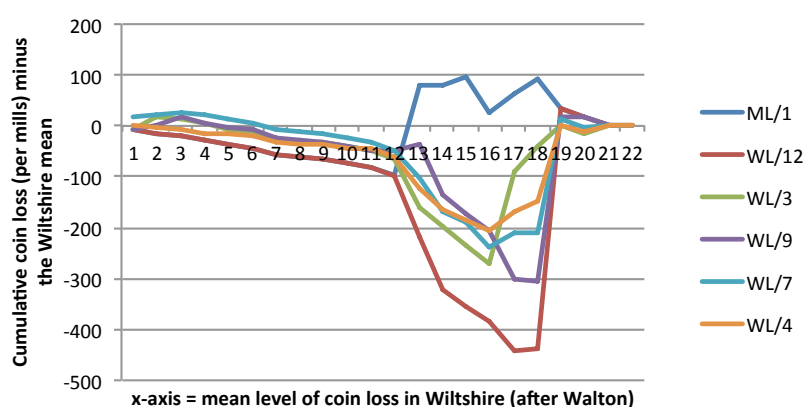


Figure 21 Coin profiles for the six Lavington findspots showing coin loss against Walton's Wiltshire Mean (x-axis). See Reece 1995 for a full discussion of the method

Broadly speaking, five of the six sites behave in a very similar way to one another with profiles which are around the same level or slightly below the Wiltshire mean until periods 13 and 14 (when they drop below the mean significantly). Four of the sites make dramatic recoveries in period 19, whereas WL/3's recovery begins a little earlier in period 17. Only ML/1 stands out as having a pattern which differs significantly from the others, with a dramatic rise in coin loss from periods 13 to 15, a further peak in periods 17–18 and then decline. However, ML/1 is represented by a sample of just 20 identifiable coins and it would be dangerous to read too much into this difference, as the addition of a small number of coins from any period could alter the profile significantly.

The general pattern for all groups except ML/1 is for fairly low levels of coin loss until the mid 4th century AD. Such a pattern, with low numbers of late 3rd-century AD radiate coins and high numbers of 4th-century AD *nummi* has been identified by Reece as a rural pattern, common at villas, rural temples, farmsteads and some 'bad towns' (urban sites which have rural patterns of coin loss) (Reece 1991, 102–7; 2002, 104). Moorhead has also shown that most rural sites in Wiltshire conform to this pattern (Moorhead 2001a, 156). This would seem to support the interpretation of the PAS findspots at West Lavington and Market Lavington as representative of a landscape of dense rural settlement.

Although late coinage dominates the assemblages, WL/3, WL/9, WL/7 and WL/4 have produced coinage of periods 1

and 2, and WL/7 and WL/4 are represented by Iron Age coins. Further evidence for early Roman activity is provided by brooches recovered from a number of the findspots. Although not as closely datable as coinage, where brooches have been recovered they are predominantly 1st to 2nd century AD in date, providing valuable chronological information for a period when coin loss was low. WL/3, WL/12, WL/7 and WL/4 are represented by brooches of the 1st to 2nd centuries AD. This suggests that these rural settlements, if this is indeed what they were, may have seen continued settlement from at least the 1st century AD through to the late 4th century AD. A note of caution is required here however. At Overton Down ODXII six late Iron Age to early Roman brooches were recovered as residual finds during excavations of a 3rd- to 4th-century AD settlement (Hutcheson *et al.* 1995, 1). These may represent accidental redeposition, although the author suggests that they may have been deliberately curated as heirlooms (Hutcheson in Hutcheson *et al.* 1995, 1–4). Whilst the early finds from the Lavington findspots may represent early Roman settlement, they should not be seen definitively as such, and they may have been in circulation for some time before deposition.

ML/1 is the only of the large groups not to have produced any 1st- to 2nd-century AD finds. It is possible that this reflects a genuinely late origin, and there is evidence from other densely occupied landscapes in the region for the emergence of new sites in the later Roman period. At Overton Down for

instance, a group of late Roman buildings were constructed on an area previously used as agricultural land (Fowler and Blackwell 1998, 73; Fowler 2000, 104). However, as established above, although ML/1 is classified as a large assemblage, it is quantitatively quite small when compared to the findspots with the greatest numbers of finds: the absence of early material here may therefore be a reflection of the sample size.

The medium assemblage WL/6 is represented by a number of brooches of 1st- to 2nd-century AD date, but is entirely unrepresented by coinage. It is possible that this is a factor of recovery or recording bias, although this seems unlikely as the detector user routinely reported coins from other locations. Alternatively, it is possible that the absence of coinage here reflects a different activity to that witnessed at other findspots, or perhaps more likely, that activity ceased before the late 3rd or 4th century AD, when coin loss became most marked at other sites in the area.

Aside from a horse and rider brooch, a type which may have particular religious associations (discussed in more detail below), the brooches represented at the PAS findspots at Lavington are of types fairly well represented at rural sites in the south and south west of the country. What stands out about the brooches are the quantities in which they have been found when compared with the numbers recovered from excavations at other Romano-British rural sites in the region. **Table 14** compares the number of brooches from each PAS findspot with those recovered from excavation of rural settlements at Box (Hurst *et al.* 1987), Overton Down (Hutcheson *et al.* 1995), Figheledean (McKinley 1999), Castle Copse (Ault and Hutchinson Pennanen 1997), Eyewell Farm, Chilmark (Fitzpatrick and Crockett 1998), Chisenbury Warren (Fulford *et al.* 2006), Maddington Farm, Shrewton (McKinley and Heaton 1996), Malmesbury (Hart *et al.* 2005), Wayside Farm, Devizes (Valentin and Robinson 2002), Euridge (Luckett 2000) and Tockenham (Harding and Lewis 1997).

The high numbers of brooches from the Lavington findspots most probably reflects the circumstances of discovery rather than ancient patterns of artefact use, as detector users are likely to search over a wider area than possible during most archaeological excavations. It is extremely likely that further brooches would be recovered from the excavated rural sites if the excavations were extended or a metal detector was used. What is useful however, is the insight this provides into the range of brooch types in use at what are probably low-status rural sites. WL/7, for instance, is dominated by brooches of British type, but is quite rich in variety, with three dolphin brooches, two t-shaped brooches, one trumpet brooch, one zoomorphic bird brooch, one strip bow Aucissa derivative brooch, one Colchester two-piece brooch and one undefined La Tène III brooch.

Four of the findspots in West Lavington, WL/3, WL/4, WL/6 and WL/12, have produced single finds of early medieval dress accessories including brooches and strap ends. Clearly, single finds such as these are insufficient evidence to argue for continuity into the early medieval period, but they do at least attest to continued activity in the landscape beyond the Roman period. At Overton Down site ODXII was robbed for stone at some point in the post-

Site	Copper-alloy brooches	Iron brooches
WL/4	10	0
WL/7	10	0
WL/12	8	0
Euridge Manor Farm villa, Devizes	8	4
WL/6	6	0
Castle Copse villa, Great Bedwyn	6	2
WL/14	5	0
WL/8	3	0
Overton Down ODXII rural settlement	3	5
ML/2	2	0
WL/3	2	0
Chisenbury Warren village	2	0
Eyewell Farm, Chilmark rural settlement and inhumation	1	0
Figheledean rural settlement	1	1
Box villa	1	0
Wayside Farm, Devizes, rural settlement	1	0
Maddington Farm, Shrewton farmsteads and burials	0	0
Roman villa, Malmesbury	0	0
Tockenham villa	0	0

Table 14 Table comparing numbers of brooches recovered from PAS findspots and excavated rural sites in Wiltshire

Roman period (Fowler 2000, 104), and it is possible that early medieval finds from some of the PAS findspots represent similar activity.

The evidence presented so far is strongly suggestive of a rural settlement pattern. Yet there is one characteristic of the coin profiles presented above which demands further attention, and this is the significant period 19 peak that occurs at all of the PAS findspots except ML/1. This is of particular interest because it is a phenomenon that has sometimes been linked to religious sites (Davies 1985, 8; Davies and Gregory 1991, 75; Reece 2002, 104).

In Wiltshire, whilst most temples and suspected religious sites peak in period 19, Moorhead has shown that this may in fact be part of a regional pattern which also includes many other rural sites (Moorhead 2001a 79–96). **Table 15** displays the PAS findspots and other Wiltshire sites with high proportions of Valentinianic coinage in rank order. This demonstrates that several of the PAS findspots are at the top end of the scale, even compared with other sites where these coins occur in high numbers. Whilst WL/12 and WL/9 share the top of the table with sites of possible religious function, the tentative attribution of these sites as religious (Moorhead 2001a, 111–16) would make it dangerous to suggest that the PAS findspots represent religious activity based on this comparison alone. There are, however, several findspots in West Lavington that have produced finds with religious characteristics which warrant exploration.

Site	Type	Valentinianic coinage <i>per mils</i>
WL/12	PAS findspot	730.8
Colerne Mounds	Religious? Uncertain	647.06
WL/9	PAS findspot	583.3
Castle Combe	Villa and or temple?	565.22
Silbury Ditch	Religious?	563.83
WL/7	PAS findspot	484.7
Butterfield Down	Rural settlement	416.18
WL/4	PAS findspot	410.8
Stanton Park	Villa	369.57
Urchfont	Religious? Or rural settlement	352.15
Bradford on Avon	Villa	350
Calstone	Possible temple	333.34
Broad Hinton	Rural settlement?	333.3
Euridge	Villa	318.18
Charlton Down	Rural settlement	314.6
WL/3	PAS findspot	303
Overton Down	Rural settlement	293.23
Nettleton	Temple	283.24
Walton's Wiltshire mean	Wiltshire's PAS coin data	260.06
<i>Verlucio</i>	Small town	220.28
Moorhead's Wiltshire mean	Wiltshire's coin data	218.2
ML/1	PAS findspot	200
Reece's British mean	National coin data	118

Table 15 PAS findspots and selected Wiltshire sites showing coins *per mils* in rank order (adapted from Moorhead 2001b, 91, table 2)

Most notable is WL/4, a location which the Wiltshire HER records as having produced finds of ‘... such quantity and quality to suggest the site of a shrine or temple’ (Wiltshire HER, number 41765). One specific find with a possible religious association from this findspot is a horse and rider brooch (WILT-F23645), a type frequently recovered from ritual contexts (Ferris 1986, 175; Bayley and Butcher 2004; Eckardt 2005). Examples have been recovered from temples at Cold Kitchen Hill and Nettleton in Wiltshire (Robinson 2001, 156) and a group were found at the temple at Lamyatt Beacon in nearby Somerset (Leech 1986; Bayley and Butcher 2004, 176). A miniature axe (WILT-E60C00) was also recovered from WL/4, and these finds are also known from ritual sites (Leahy 1980b; Green 1985). Such finds are seen as representative of sacrifice, possibly as a substitute for a live animal which may have been beyond the means of many (Henig 2004, 229). Finally, a copper-alloy figurine of Mars (WILT-69AC91) and a possible figurine base (WILT-EA9AF4) were recovered from WL/5, 250m downslope of WL/4. Similar figurines

representing a number of deities were recovered from Lamyatt Beacon (Henig 1986), and a bronze figurine of Mercury has also been recovered from near the temple at Cold Kitchen Hill (Robinson 2001, 154). Therefore in total there are four artefacts with likely religious associations from the two findspots on this hillside.

Two other findspots included artefacts with possible religious associations. WL/12 included a second miniature axehead (WILT-2160B7) and ML/1 included a possible votive object (WILT-1FrEB2), perhaps intended to represent an eye. It seems extremely unlikely that each findspot in West Lavington which has produced a potentially religious artefact and/or large quantities of Valentinianic coinage is representative of a specifically religious site. What seems more likely is that artefacts that are often considered characteristically religious or votive circulated quite widely on domestic sites, perhaps through their use as amulets, as has been suggested for miniature axeheads (Robinson 1995, 68). Many rural settlements would also have had shrines (Robinson 2001, 162), and religious artefacts have been recovered from other sites in the vicinity which are otherwise considered rural (a bronze plaque depicting Minerva, a figurine of Mercury and a cloaked genius figurine were recovered from Charlton Down for example (Henig 2001, 110; Robinson 2001, 156)). Miniature axeheads have also been recovered from sites regarded as secular rural settlements (Robinson 1995, 68), including one from Overton Down ODXII (Hutcheson *et al.* 1995, 2). It is therefore probably safest to regard occasional finds of possible religious artefacts as incidental, and we should perhaps regard them as a normal part of rural assemblages. The group of artefacts with potential religious associations from WL/4 represents the best evidence in the parish for a site with a religious focus, but even here this is by no means conclusive.

In summary then, the PAS data from West Lavington seem to be representative of a very dense and complex settlement pattern, with perhaps eight or more individual rural settlements, possibly farmsteads or hamlets, located on the hillslopes overlooking the valley. Besides their wide distribution, an extremely valuable aspect of the PAS data here is the chronological information they provide. By utilizing both coin and artefact data, it has been possible to suggest that many of these settlements were apparently occupied from the late Iron Age until the late 4th century AD, though there would surely have been change and development throughout this time. It has been possible to suggest that one may have had a religious focus, whilst religious artefacts also circulated at some others. The clustering of a group of apparently distinct settlements with coin profiles with period 19 peaks has also added support for Moorhead's suggestion that this is a regional rather than religious phenomenon.

Localized case study: Great Bedwyn/Shalbourne

A number of PAS findspots occur in and around the parish of Great Bedwyn in east Wiltshire. Using the methodology established in Chapter 3, eight distinct findspots were recognized in Great Bedwyn and immediately adjacent in the parishes of Burbage and Shalbourne (**Fig. 22**). Two of these findspots are represented by single finds, two are small

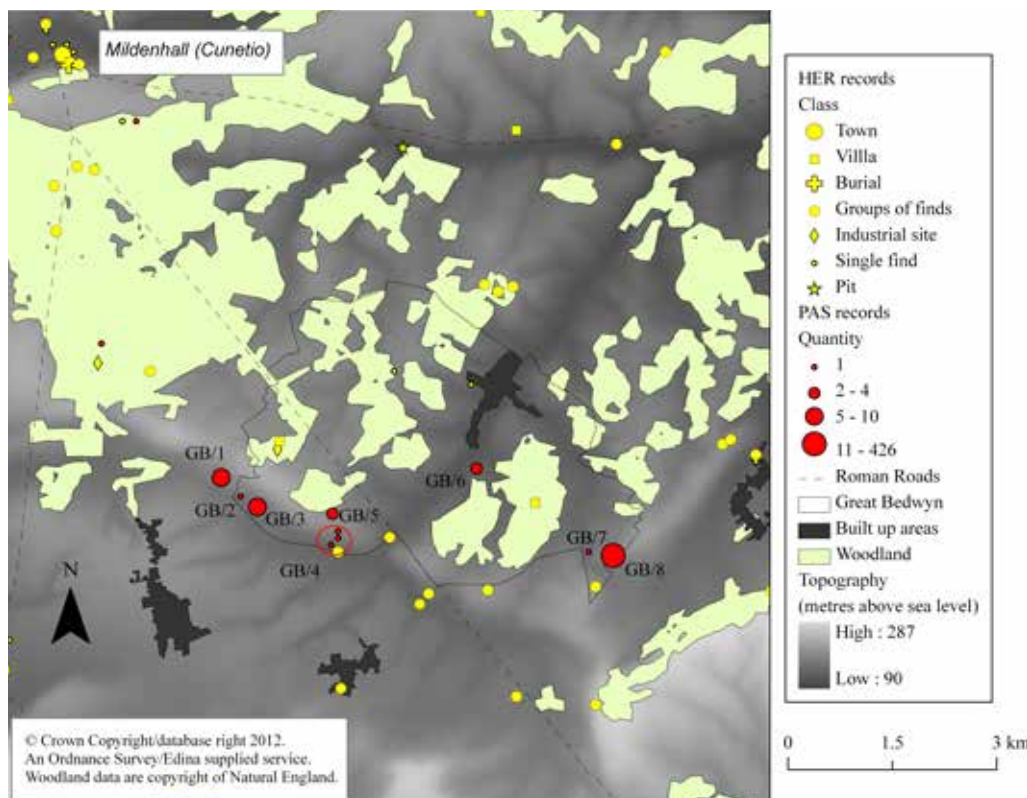


Figure 22 Map showing HER and PAS data in the area around Great Bedwyn, Wiltshire. Note the dense woodland of the Savernake Forest

groups, two were medium groups and there is a single large group of finds. There are no findspots of exclusively non-metal material from the area. All of the finds from the area were collected by two individuals, a father and son detecting together. These finders have less time available to spend detecting than the finder from West Lavington (Katie Hinds pers. comm.) and so search less. Historically, they have also not regularly reported all of their finds to the PAS, but only those they thought were particularly interesting (Katie Hinds pers. comm., finder pers. comm.). Most finds are recorded to eight figure grid references, and as at West Lavington, the FLO has indicated that the grid references provided generally refer to the area within the fields from which finds were recovered. Specific descriptions of the shape of the fields in which finds were recovered are very useful here, and allow the finds to be mapped and interpreted with relative confidence.

The findspots from the Great Bedwyn area form an interesting case study, partly because, as at West Lavington, the locational information associated with them appears to be fairly reliable and precise, but also because they occur in the vicinity of known Romano-British sites that have attracted much archaeological interest. Most significant is the excavated Castle Copse villa, an extremely rich and luxurious courtyard villa, amongst the largest known from Britain (Hostetter 1997b, 372; Walters 2001, 131). The publication of the site considers the villa and its surrounding landscape in some detail (Hostetter and Howe 1997).

Slightly further afield, approximately 6km to the north west is the Roman 'small town' of Mildenhall (*Cunetio*), and a road linking Mildenhall to Winchester (*Venta Belgarum*) runs through the parish. Between Great Bedwyn and Mildenhall is the Savernake Forest, an area known as a centre for the Roman Savernake pottery industry (Timby 2001), which was

a focus for Hodder's work on Romano-British market economies (Hodder 1974). Indeed, the area around Mildenhall appears to have been very densely settled in during the Roman period (Hostetter 1997a).

Despite the dense Romano-British activity known from the area surrounding Great Bedwyn there is relatively little recorded on the HER of Roman date in Great Bedwyn itself, or from immediately outside the parish. This is likely to be a result of dense woodland in the area obscuring archaeological evidence, confirmed by a recent LIDAR (light detecting and ranging, a remote sensing technology) survey undertaken by English Heritage as part of the National Mapping Programme, which revealed evidence for a large number of previously unknown sites obscured by woodland (Crutchley *et al.* 2009).

Aside from the Castle Copse villa, an additional villa is known from the west of the parish at Tottenham House (Scott 1993, 202), where a short distance away Roman pottery kilns were also excavated (*Wiltshire Archaeological and Natural History Magazine* 1965, 135–6).

Immediately north of the parish is Chisbury Camp, an Iron Age hillfort which has also produced finds of Romano-British date, (Pugh and Crittall 1957, 267; Hogg 1979, 209), including a probable dispersed hoard of Republican and early Imperial coinage (Robinson 1997, 30). Further casual finds are also recorded on the HER from the area surrounding the hillfort. Aside from this, other records of Romano-British activity include a deposit containing pottery and animal bone reported from the south of the parish in the late 19th century (*Wiltshire Archaeological and Natural History Magazine* 1866, 170). This occurs in a field adjacent to one where PAS data were recovered; approximately 200m from a small group of finds recorded on the PAS database and may therefore be related. A

Artefact type	Quantity
Coins	261
Brooches	14
Figurine	1
Mount (military)	1
Finger ring	2
Bracelet	1
Nail cleaner	1
Spindle whorl	1
Unidentified object	1
Total	283

Table 16 Summary of late Iron Age and Roman artefacts available on the PAS database from findspot GB/8

dragonesque brooch (an uncommon type for Wiltshire, normally occurring in the north of the province (Bayley and Butcher 2004, 171)) was also recovered during the excavation of a Bronze Age ring ditch (Pugh and Crittall 1957, 266) and several other scatters of ceramics and single finds are recorded on the HER, predominantly from around and outside the southern border of the parish.

This case study focuses on the findspot GB/8, the only findspot in the parish to have produced enough artefacts to confidently argue for significant activity.¹ It is worth noting the fairly wide distribution of PAS data in the parish (and just over the border to the west in Burbage). The opportunities for recovery of artefacts are clearly restricted in Great Bedwyn as a result of the widespread woodland, and the finder has also explained how he was unable to get permission to search in many parts of the parish. It seems likely therefore that much of the parish was represented by Romano-British activity, and the PAS data represent a sample of what is likely to remain in inaccessible areas.

This may be of significance for considering activity in the landscape surrounding a known villa, particularly as Hostetter and Howe have previously commented on a seeming absence of ‘native settlements’ in the immediate environs of the Castle Copse villa (Hostetter 1997b, 375). Besides the large assemblage at GB/8, the medium sized groups at GB/1 and GB/3 may be seen as potentially representative of settlement. Neither of these findspots is represented by coinage, yet correspondence with the FLO and finder has indicated that this was because the finder did not routinely report coins they thought the FLO would not be interested in, and not because they were not recovered. This reduces the interpretative value of the data from these findspots. Nonetheless, the chronological information provided by brooches from both findspots suggests that there was activity in the area during the 1st to 2nd centuries AD at least.

The choices made by the finder as to what finds to report to the FLO have important implications for our understanding of Romano-British activity in the parish. Had all finds of coinage been reported then there may have been a greater number of large assemblages which could be interpreted as areas of settlement with more confidence.

However, based on the data available it has only been possible to interpret the other findspots as representative of broad activity within the landscape. Where chronological information is available these findspots suggest activity dating from the late Iron Age (with examples of Iron Age coinage recovered from GB/2, GB/4, GB/5 and GB/7) into the 1st and 2nd century AD (at GB/4, GB/5 and GB/6). There is little evidence for late Roman activity in the landscape, although as we have seen, this perhaps reflects the finder’s decision not to report Roman coins.

However, at GB/8 in the far east of the parish, right on the Shalbourne border, enough coins were recorded on the PAS database to enable classification of this findspot as a large assemblage. This findspot is represented by 283 late Iron Age/Roman artefacts on the PAS database. The vast majority of these are coins, although other artefacts are represented (**Table 16**). Whilst there are 261 coins recorded on the database the finder has confirmed that he has recovered ‘around 400’ coins from the location and it is clear that not all coins from the site have been reported. However, the application of Reece periods to the 251 fully identifiable coins has been undertaken (Brindle *et al.* 2013). Unusually, the coin profile for the recorded coins from the site shows significant peaks in periods 13 (260–75) and 14 (275–96) (**Figs 23–4**). Such a profile, with a greater proportion of late 3rd-century AD rather than 4th-century AD coins, is generally characteristic of urban sites (Moorhead 2001b, 90; Reece 2002, 102), and as we have seen in the case study from Lavington, most Wiltshire sites are very poorly represented by coinage of these periods (Moorhead 2001b, 90).

Moorhead does provide some examples of sites with similarly high proportions of coins of periods 13 and 14 however. Some of these are urban sites such as Easton Grey and Westbury, yet a small number of villas and temples are also included, notably Littlecote and Cold Kitchen Hill (Moorhead 2001b, 90). The reason for GB/8’s unusual coin profile is currently unclear. One explanation might be that the coin assemblage includes an unrecognized dispersed hoard of the late 3rd century AD, a suggestion made by Moorhead for Westbury on account of its large proportion of coins of periods 13 and 14 (Moorhead 2001a, 91). However, as not all coins recovered from the findspot have yet been reported it would be dangerous to make assumptions based upon these coin profiles, and they may be subject to change as additional coins are added.

GB/8 has other interesting characteristics aside from its unusual coin profile. Amongst the artefacts recovered from the findspot is a fragment of a lead figurine of Mercury (WILT-EEB1F4), perhaps indicating religious activity at the location. The presence of a 4th-century AD pelta mount (WILT-C93921), an artefact with military associations, also adds to Griffith’s record of late military buckles from Wiltshire (Griffiths 2001, 68).

The location of the findspot is also of interest, occurring on a prominent hill around 1300m to the south east of the villa at Castle Copse. An anomaly visible on Google Earth in the area from which the finds were recovered prompted a programme of geophysical fieldwork undertaken by the author, members of the Portable Antiquities Scheme and the finder responsible for the discoveries (Brindle *et al.* 2013).

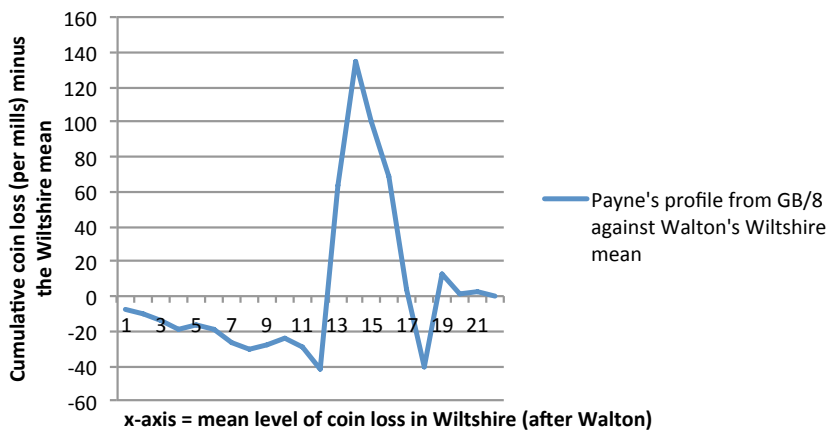


Figure 23 Coin profile for findspot GB/8 showing coin loss against Walton's mean for coin loss in Wiltshire (x-axis). See Reece 1995 for a full discussion of the method

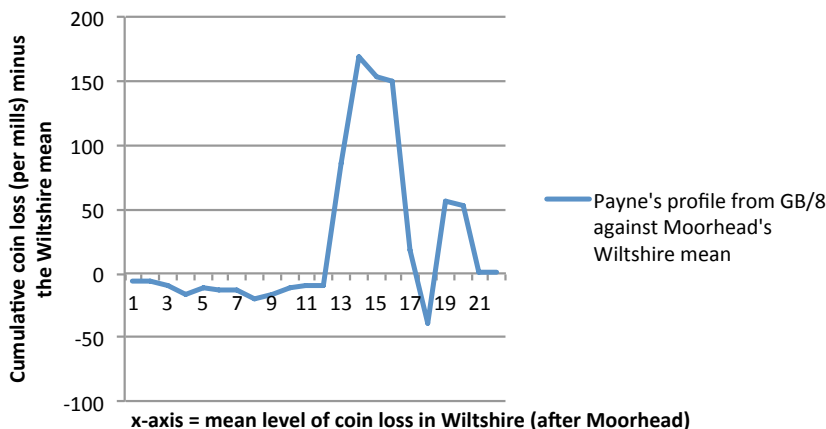


Figure 24 Coin profile for findspot GB/8 showing coin loss against Moorhead's mean for coin loss in Wiltshire (x-axis). See Reece 1995 for a full discussion of the method

Magnetometry and resistivity survey revealed a square enclosure ditch of $60\text{m} \times 60\text{m}$ with a single south-west facing entrance (**Fig. 25**). Although the single grid reference provided for the PAS finds occurs just outside the enclosure, notes on the PAS database indicate that the finds occur across an area of $25\text{m} \times 25\text{m}$, and the finder confirmed that the finds were recovered from precisely the area in which the survey took place.

The large numbers of Roman finds from this area suggest that the enclosure may be of Roman date, although a small number of medieval and post-medieval finds on the PAS database from the area make it difficult to argue that the enclosure is Roman with absolute certainty.

Roman finds do outnumber those from other periods fairly significantly however. A dogleg in the Great Bedwyn/Shalbourne parish boundary is interesting and this may reflect the presence of a structure or feature in the location. This dogleg is visible on the earliest Ordnance Survey map available for the parish (the 1st edition 1:10,560 County Series map for Berkshire) (Ordnance Survey 1877), and there is nothing recorded on this map which explains why the boundary should take the course that it does. It therefore seems likely that the parish boundary was well established by the mid to late 19th century, and that it respected a feature in the landscape no longer visible then. Whilst ditched enclosures may have performed a multitude of functions including settlement and enclosure of stock, the regularity of the layout of the enclosure at GB/8 suggests it may have had some importance.

The form is not common morphology for late Iron Age and Romano-British settlements in the area (Bowen and

Fowler 1966; Taylor 2007), but it does bear comparison with some known Romano-British shrines. At Westhawk Farm, Ashford, in Kent, a rectangular ditch of approximately $27 \times 30\text{m}$ enclosed a wooden post-built structure with a central pit, possibly associated with a large free-standing post (Booth *et al.* 2008). A late Iron Age to early Roman shrine which overlay a Bronze Age barrow was enclosed by a rectangular ditch and bank at Haddenham in Cambridgeshire (Frere 1984, 298; Evans and Hodder 2006). Also in Cambridgeshire, a circular ditched *cella* at Diddington was enclosed by a rectangular enclosure of approximately $70 \times 40\text{m}$ (Jones 2001). Similar Iron Age and early Roman enclosed shrines of timber construction were sometimes later elaborated in stone, as at Hayling Island, Hampshire (King and Soffe 1991), but the example from Westhawk Farm, apparently still in use during the later Roman period, suggests that architectural elaboration was not inevitable for such sites. Based on the close morphological similarities with the excavated examples cited above it seems quite possible that the site at GB/8 was a rural Romano-British shrine, and the artefacts recorded on the PAS database potential votive deposits. The enclosure is of similar form to those discussed above, and as internal features in the excavated examples consisted of post-built structures and ditches it seems plausible that these were present at GB/8 but have not been revealed by the geophysics. However, all of the examples discussed above have entrances orientated towards the east or south east, a general phenomenon noted for Romano-Celtic temples in Britain and on the continent (Lewis 1966, 32). The orientation of the entrance towards the south west at GB/8 is

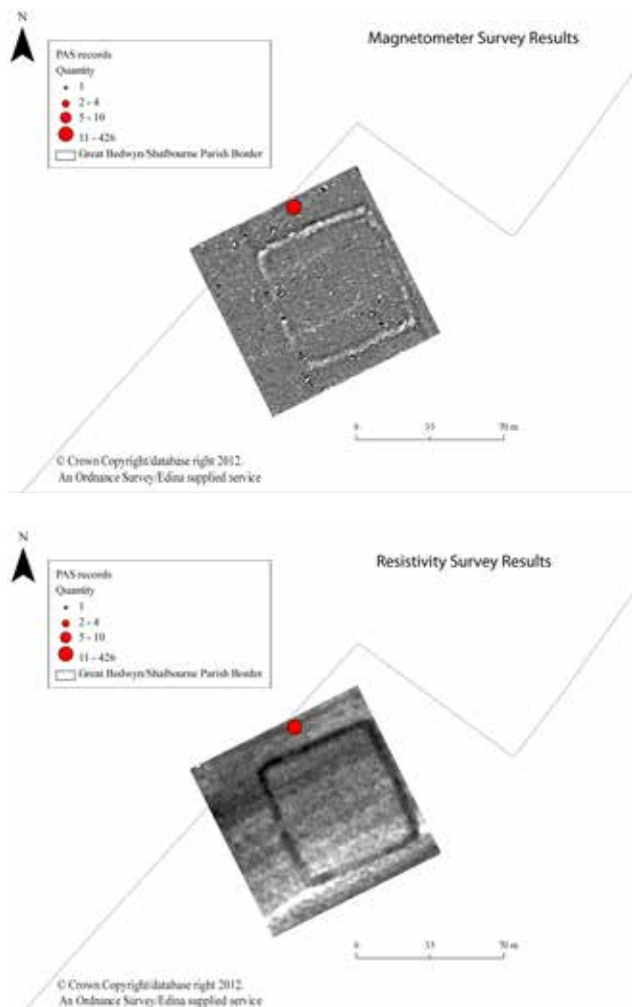


Figure 25 Magnetometry and resistivity survey plots from geophysical survey at findspot GB/8

therefore unusual amongst religious sites, although it is not exceptional (Lewis 1966, 33). One explanation for the unusual orientation might be the position of the enclosure in relation to the local terrain, with the entrance perhaps orientated towards the direction of access from the narrow valley below. The Roman road from Mildenhall to Winchester passes in a south-easterly direction approximately 2km to the south west, and it is also possible that the entrance to the enclosure was orientated towards this communication route, although GB/8 would have been obscured from view of the road by the terrain in between.

The fact that the orientation of GB/8 seems to have no relationship to the presence of the Castle Copse villa may suggest that there was no direct relationship between the two sites, though based on the chronological information available from the coinage and brooches from both sites they appear to have been in use during the same time. Artefacts associated with Mercury have been recovered from both sites (the Mercury figurine in the PAS assemblage and a cockerel figurine at Castle Copse, a creature with known associations with Mercury (Robinson 2001, 160)) and it is tempting to seek a connection based on local worship of this deity. However, Mercury is one of the deities most commonly represented in Wiltshire (Robinson 2001, 155) and the close proximity of the figurines from GB/8 and Castle Copse may be a coincidence.

The observation that Iron Age and Romano-British rural temples often occur near tribal boundaries has been made by a number of workers (Woodward 1992, 20; Curteis 1996), and such sites may have served as local meeting places or market centres. If GB/8 was a site of ritual significance, its location at the boundary between two parishes may be of potential interest in this regard. However, it is impossible to determine whether the line of the present parish boundary had any significance whatsoever in the Roman period, and its relationship to GB/8 may of course be entirely coincidental.

Regardless of whether there was any specific link between GB/8 and Castle Copse, the importance of the findspot is its contribution to our understanding of the occupation of a landscape in the vicinity of a major villa. GB/8 and the other findspots from the parish suggest that the landscape may have been densely settled, just as pottery scatters from around Tockenham villa in north Wiltshire have been seen as evidence for settlements in its vicinity (Harding and Lewis 1997, 38–9). Certainly, the landscape surrounding Castle Copse villa does not appear to have been as empty as Hostetter has suggested (Hostetter 1997b, 374).

Conclusions

Together, the two case studies presented in this chapter have included the recognition of a landscape of dense activity, with several possible farmsteads or hamlets identified in West Lavington, and a square ditched enclosure, possibly a rural shrine, at Great Bedwyn. The case study from Great Bedwyn has demonstrated the value of undertaking archaeological fieldwork at sites from which metal detector finds have been recovered, providing a morphological context for the artefacts. The two case studies have also provided useful examples of the composition of metal detector assemblages from Romano-British sites, where coins and brooches dominate and provide useful chronological information, but where occasional finds of other artefact types can aid interpretation. Comparison of these two case studies also raises an important methodological issue. At West Lavington, a wide area was fairly intensively searched by the detector user who reported almost all of his finds. This enabled recognition of several discrete areas of possible settlement focus. At Great Bedwyn, access to land restricted the extent to which searching was undertaken, the finders searched with less intensity and they did not report finds they did not realise would be of interest. Here, only one likely settlement was identified with confidence, yet smaller groups and single finds attest to wider activity within the parish. This raises the question as to whether Great Bedwyn would have produced more large assemblages which could potentially be interpreted as settlements if it were more extensively and intensively searched and if the finders reported all discoveries. It seems entirely plausible that it would. The apparent difference in density of settlement in the two case study areas therefore seems more likely to be a result of issues affecting the recovery and reporting of metal detector finds than genuine differences in the settlement pattern. If the well-searched and reported parish of West Lavington represents a typical Romano-British rural landscape in Wiltshire, then many areas may have been far more densely populated than current

evidence suggests. This underlines the importance of encouraging detector users to report all discoveries and of collecting information about how often and where they detect.

The localized case studies were only two examples selected from a large number of potential sites suggested by the PAS data. The above section showed how Wiltshire's PAS data represent a total of 81 potential Romano-British sites (p. 34). Based on comparison with the distribution of Wiltshire HER data, 61 (75.3 per cent) of these may represent 'new sites'. This potentially increases the number of Romano-British sites known from Wiltshire by 14.3 per cent, and provides enhanced information for a further 4.7 per cent. This is a significant amount from a county which has been subject to much archaeological investigation.

However, the general distribution of PAS data presented above (p. 32) showed clear biases in this distribution. The data are most notably absent from urban areas and non-

agricultural land. Particularly dense clusters of PAS data often occur on rural land in the immediate vicinity of small towns and villages, and this is apparently a result of the most active detector users living in these areas and searching close to where they live. The broad distribution of PAS data in Wiltshire does not dramatically alter our understanding of the distribution of Romano-British settlement as it is currently understood from other archaeological sources, and there are few areas represented by PAS data that are entirely unrepresented by other archaeological information. However, the PAS data do allow us to fill in some of the small gaps in Wiltshire's Romano-British landscape, as demonstrated in the case studies at West Lavington and Great Bedwyn.

Notes

- ¹ The results of this case study are also the subject of an article published in *Wiltshire Archaeological and Natural History Magazine* (Brindle *et al.* 2013).

Chapter 5

A Regional Case Study from Worcestershire and Warwickshire

Introduction

This chapter assesses the value of PAS data as a resource for enhancing understanding of Romano-British settlement in Worcestershire and Warwickshire. The chapter follows the same format as the regional case study presented in the previous chapter, and the reader is directed towards the introduction to Chapter 4 for an overview of the structure of the discussion. The localized case studies discussed later in this chapter focus on Warwickshire's Arrow valley, where the potential PAS data have for investigating activity in the hinterland of nucleated settlements is explored, and Brailes, also in Warwickshire, where finds have been recorded with particularly good levels of spatial precision.

Romano-British settlement in Worcestershire and Warwickshire

Although Worcestershire and Warwickshire received some attention from antiquarians, early archaeological activity was limited in comparison to that witnessed in some counties (Wiltshire, for example, in Chapter 4) where impressive standing monuments are well represented (Bond 1974, 1; Booth 2001, 1; Atkin 2004, 239). It was not until well into the 20th century that significant work was undertaken on Roman sites in either county (Booth 2001, 1; Atkin 2004, 239–40) and, as a consequence, until relatively recently Worcestershire and Warwickshire were seen as a backwater in the Roman period. This is partly a result of the long-held belief, particularly in Worcestershire, that much of the area was densely forested until the medieval period and that settlement until that time was sparse (Bond 1974, 1). Developments in archaeology during the second half of the 20th century, most notably the systematic application of aerial photography and the advent of rescue archaeology, led to a dramatic revision of ideas about the extent to which Worcestershire and Warwickshire were settled in during the prehistoric and Roman periods, suggesting that settlement was denser and more widely distributed than previously thought (Bond 1974, 2–3; Booth 1996, 26; 2001, 1–2; Atkin 2004). Brief syntheses for both Worcestershire (Bond 1974) and Warwickshire (Webster 1974) emerged in the 1970s, yet more recent syntheses have been able to draw upon a significantly increased database of evidence gathered over the past 35 years, chiefly from rescue excavations and aerial photography (Booth 1996; 2001; Lockett 2001; Alexander *et al.* 2007; Jackson and Dalwood 2007).

However, the reliance on aerial photography and excavations ahead of development has led to an imbalanced understanding of both counties. The best evidence for Romano-British settlement comes from the major river valleys of the region, the Severn, the Avon and the Arrow, where the sands and gravels are susceptible to aerial photography and have produced evidence from excavation ahead of aggregate extraction (**Fig. 26**). As these areas are also likely to be the most populated parts of the region, development-led work ahead of road and urban expansion has tended to focus on similar areas (Alexander *et al.* 2007, 42). Research-led investigation has been limited in both counties and in many cases understanding of sites and landscapes, whilst greatly enhanced by the discovery of sites since the inception in 1990 of PPG 16 (Planning Policy

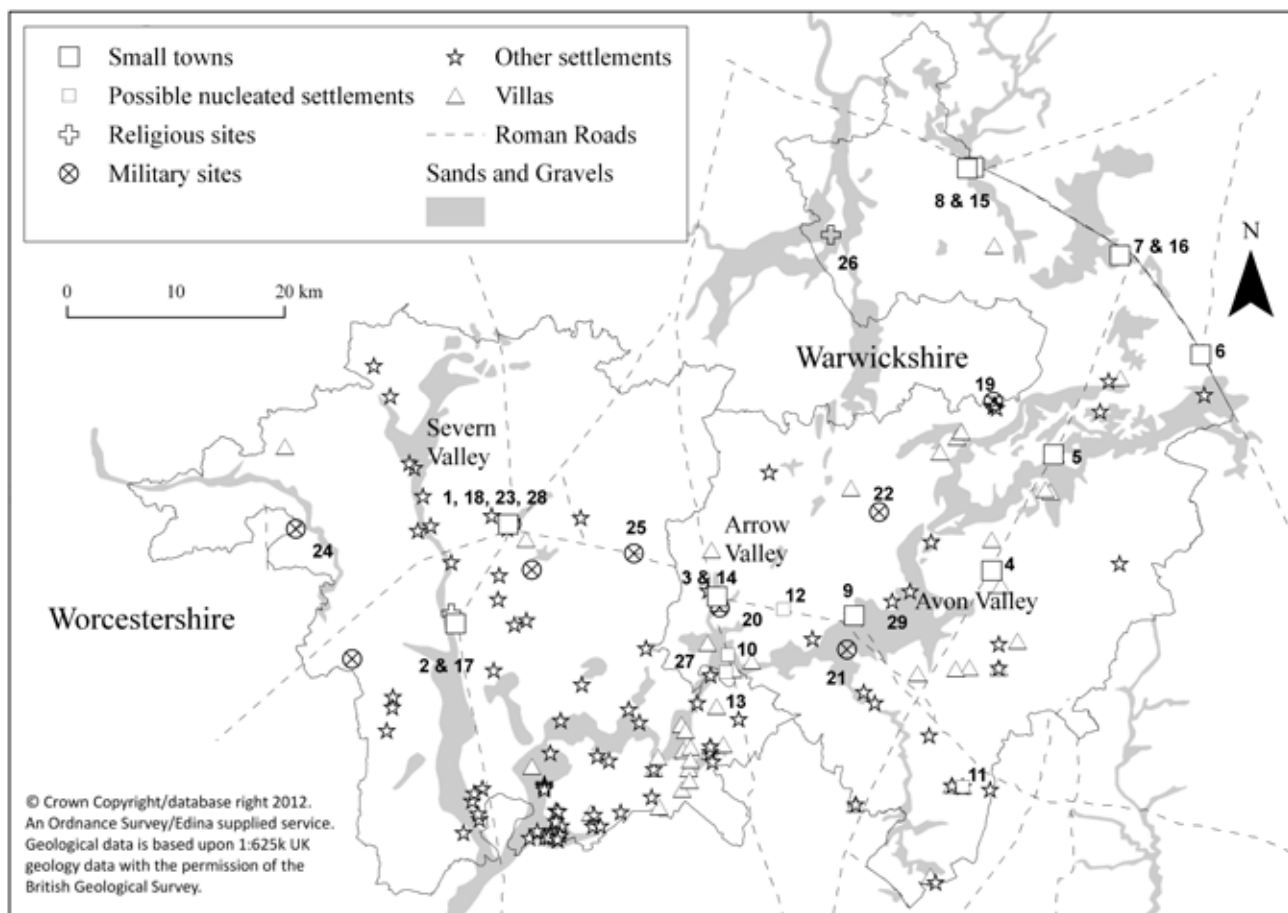


Figure 26 Map showing distribution of major Romano-British sites in Worcestershire and Warwickshire with sites discussed in the text numbered. Sites mentioned in the text – towns: 1 Droitwich; 2 Worcester; 3 Alcester; 4 Chesterton; 5 Princethorpe; 6 Tripontium; 7 High Cross; 8 Mancetter; 9 Tiddington; possible nucleated settlements: 10 Bidford-on-Avon; 11 Brailles; 12 Billesley; 13 Marlcliff; military sites: 14 Alcester; 15 Mancetter; 16 High Cross; 17 Worcester; 18 Dodderhill; 19 the Lunt; 20 Oversley Lodge; 21 Orchard Hill Farm; 22 Budbrooke; 23 Crutch Lane; 24 Clifton; 25 Feckenham; major religious sites: 26 Coleshill; villas: 27 Salford Priors; 28 Bay's Meadow; other settlements: 29 Wasperton

Guidance note 16, which formalized the importance of archaeology in the planning process and required developers to make provision for archaeological work), is restricted in detail by the limited nature of development-led fieldwork (Booth 1996, 100; 2001). Although not so well represented, evidence from geologies other than gravel indicate that these areas were utilized in the Roman period, and that there is a marked increase of Roman period sites in these areas in comparison to the preceding periods (Alexander *et al.* 2007, 65). This has been taken as possible evidence for the broadening of farming practices and a diversification of industrial activity in the Roman period, though it should be noted that Romano-British settlements may be more easily recognized in these areas as a result of the construction of masonry built structures (Alexander *et al.* 2007, 65).

The area contained by the modern counties of Worcestershire and Warwickshire is believed to have fallen within the territories of two late Iron Age tribes; the *Dobunni* in the south, whose territory also occupied Gloucestershire and parts of Oxfordshire and Wiltshire, and the *Cornovii* to the north, with territory stretching across Staffordshire, Shropshire and Cheshire (Booth 1996, 26; Ordnance Survey 2001; Morton and Holbrook 2007, 102). There appears to be a genuine difference in the settlement pattern between the

north and the central and southern parts of the counties, particularly in Worcestershire. In the Avon Valley for example, in south Worcestershire and Warwickshire, the settlement pattern is similar to that witnessed further south in the Upper Thames valley in Oxfordshire and Gloucestershire (Morton and Holbrook 2007, 105) and the major river valleys of the East Midlands (Taylor 2007, 62). Here, settlement was formed by a complex pattern of enclosed, open and linear settlements linked to extensive field systems (Taylor 2007, 54, 62) in a landscape populated by villas (though not substantial numbers) and small towns. However, in the north and north west of Worcestershire the settlement pattern is more similar to that seen further north and west in Herefordshire and Shropshire. Here, individual ditched enclosures are the dominant settlement type (Morton and Holbrook 2007, 106), in a landscape where villas and small towns are much less widely known. The Romano-British settlement pattern in Warwickshire appears to be more uniformly represented by the pattern that prevails in central and southern Worcestershire, but the north of the county has seen a lower frequency of intensive archaeological investigation and is less well understood than the south.

The differences in settlement pattern in the region have often been linked to differing farming regimes in the Roman period, with suggestions that the higher terrain of the north

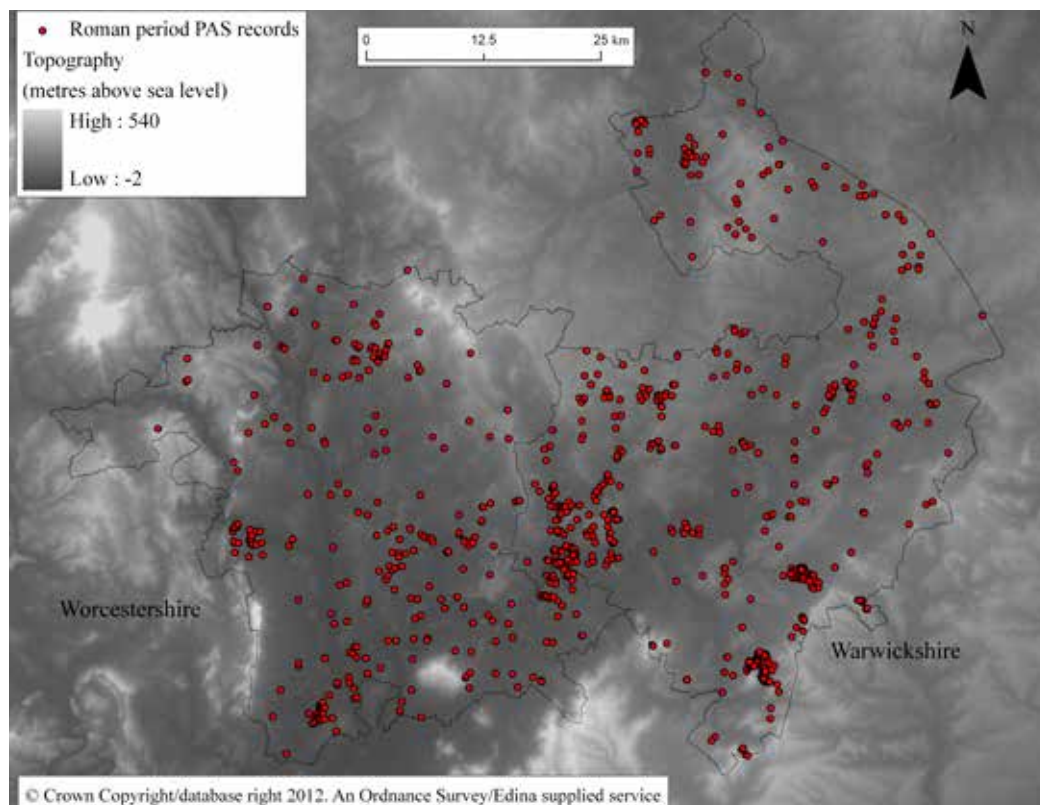


Figure 27 Distribution of Roman PAS data in Worcestershire and Warwickshire

and west was characterized by pastoral farming and the fertile river valleys of the south and east by arable farming (Morton and Holbrook 2007, 106; Pearson 2007, 109). The difference in settlement form and less obvious use of durable Roman material culture in the north and west of the region may reflect a lower level of involvement in the market economy on the part of pastoral communities, yet may also represent choices reflective of social and cultural values deeply imbedded in communities from different farming regimes (Morton and Holbrook 2007, 106).

The distribution of sites with urban characteristics in the region reflects the above trend, tending towards the central, south and east of the two counties. There are no major Roman towns of *civitas* capital status or higher, but there are a number of nucleated settlements that are often termed ‘small towns’ or ‘minor centres’, based upon their size and apparent relationship to the Roman road network. Two such sites are known from Worcestershire. Droitwich (*Salinae*), which lies on the River Salwarpe, not far from its junction with the Severn, was served by roads from Gloucester, Metchley, Alcester and possibly Wroxeter (Burnham and Wachter 1990, 214), and is understood to have been a centre for salt extraction (Burnham and Wachter 1990, 216; Morton and Holbrook 2007, 104). Worcester lies on the east bank of the River Severn on the Roman road from Gloucester to Droitwich and, although poorly understood, has produced evidence for iron working (Burnham and Wachter 1990, 234; Morton and Holbrook 2007, 104).

Several ‘small towns’ are known from Warwickshire. The best understood is Alcester, where an extensive settlement lies near the confluence of the Rivers Alne and Arrow, at a junction between the Roman roads of Ryknild Street and the Salt Way (Burnham and Wachter 1990, 92–7; Cracknell and Mahany 1994; Booth and Evans 2001). More nucleated settlements occur

alongside other Roman roads in Warwickshire, including Chesterton and Princethorpe on the Fosse Way and *Tripontium*, High Cross and Mancetter on Watling Street.

Tiddington is one of the few nucleated sites to have been located away from the major road network. Other sites which may have served as potentially important local centres but for which there is currently limited evidence include Bidford-upon-Avon, Brailes, Stretton-on-Fosse, Billesley and Marcliff. A local market function is suspected for most of these sites and they are likely to have been closely linked with the surrounding agricultural landscape. Bidford-upon-Avon is a roadside settlement that occurs along the course of Ryknild Street and whilst it has seen some limited excavation, the character and extent of the Roman settlement are not known (Booth 1996, 38), although recent work on early medieval PAS data from the village has suggested it became an important settlement in this period (Naylor and Richards 2010).

Some of the above small towns may have developed from settlements initially associated with early Roman military occupation in the region, and mid 1st-century AD forts are suspected at Alcester, Mancetter, High Cross and Worcester. A fort at Dodderhill, Droitwich has been seen as separate to the town (Lockett 2001) and the Lunt fort near Coventry appears not to have spawned a civilian settlement. Other possible forts are known primarily through aerial photography and are poorly understood. In Warwickshire these include Oversley Lodge (south of Alcester), High Cross, Orchard Hill Farm, Stratford and Budbrooke. In Worcestershire Crutch Lane, Clifton and Feckenham have all been identified as possible forts through aerial photography.

Sites with a religious or ritual focus are not widely known in Worcestershire and Warwickshire, though it is likely that they existed to an extent well beyond the current evidence.

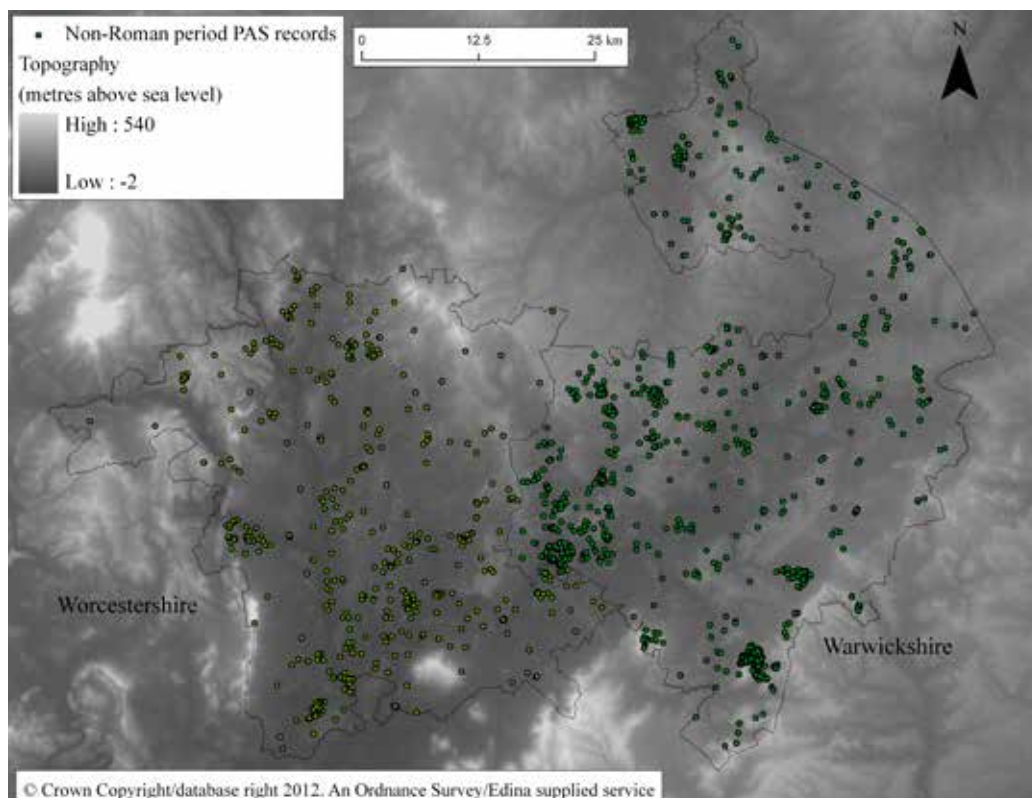


Figure 28 Distribution of non-Roman PAS data in Worcestershire and Warwickshire

The primary example comes from Coleshill in northern Warwickshire, a major temple complex comprising a large stone-built temple of typical Romano-Celtic plan within a *temenos*, preceded by an earlier timber structure which overlay a previous, possibly Iron Age, domestic settlement (Booth 1996, 39).

Other possible examples from Warwickshire include a cropmark site at Church Lawford. There appear to be no unequivocal temple sites in Worcestershire, although circular foundations found during excavations in Worcester were suggested as relating to a possible temple (Wilson 1969, 15).

Villas are known from both Worcestershire and Warwickshire, although they do not occur in the numbers witnessed further south in the Cotswolds, nor do there appear to be examples of great pretension. In both counties the south dominates the distribution of villas, and there is a clustering around the gravel terraces south of the River Avon (Booth 2001, 5; Morton and Holbrook 2007, 104).

As noted above, this may reflect the deliberate location of villas on areas of fertile land, but it may also be an artefact of geographically imbalanced archaeological evidence. A notable example from Warwickshire was excavated ahead of road development at Salford Priors in the Arrow valley, where a complex of buildings was investigated including a bath suite (Palmer 1999). The best known villa in Worcestershire is at Bay's Meadow, Droitwich, although this site has been characterized as an 'urban villa' (Morton and Holbrook 2007, 105), directly associated with the control of salt production in the town (Barfield 2006, 239).

The general character of non-villa rural settlement has been noted above. Our understanding is heavily biased towards the river valleys where most of the evidence comes from. The evidence for most of Warwickshire and southern Worcestershire suggests a complicated mixed pattern of linear

settlements set around agricultural fields and some individual enclosures. The north and north west of Worcestershire is characterized more by individual enclosures and complex linear settlements are rarer. Parts of southern Worcestershire have been described as 'extensive articulated landscapes covering many hectares composed of settlement enclosures, paddocks, trackways and fieldsystems ...' (Morton and Holbrook 2007, 105) and much of Warwickshire appears to have been settled in the same way.

A number of low-status rural settlements have now been excavated in both counties, primarily ahead of gravel extraction (Morton and Holbrook 2007, 105). One of the most significant of these is Wasperton in the Avon Valley, occupied from the 1st to 4th centuries AD (in contrast with some rural sites which seem to have been abandoned in the mid 2nd century AD) (Morton and Holbrook 2007, 106). The site provided evidence for agricultural production amid a series of rectangular enclosures and an associated field system. A related settlement was also excavated which provided evidence for both Romano-British and Anglo-Saxon inhumations and cremations (Carver *et al.* 2009).

The distribution of PAS data in Worcestershire and Warwickshire

The final PAS dataset for Worcestershire and Warwickshire was downloaded on 3 August 2009. After the data had been cleaned there were 7,499 PAS records dating to the Roman period from Worcestershire and Warwickshire. These figures include 162 records of late Iron Age date and 15 from the early medieval period which possibly date from as early as the 5th century AD. Of these records 1,888 are from Worcestershire and 5,611 are from Warwickshire. The reasons for this geographical imbalance are discussed below.

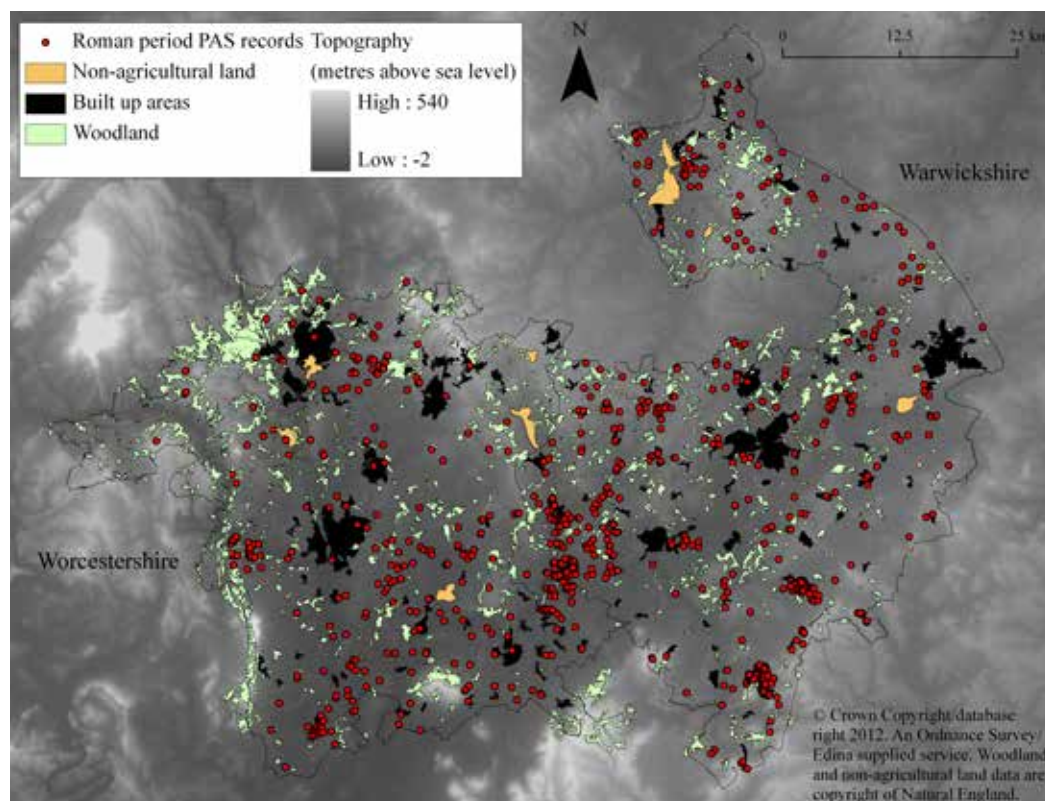


Figure 29 Distribution of Roman PAS data in Worcestershire and Warwickshire against major recovery constraints

Figure 27 plots the distribution of PAS data of Roman date whilst **Figure 28** presents the distribution of data from all other periods. The two distributions are broadly comparable, suggesting either that the historic settlement pattern has always been influenced by similar environmental factors, or that PAS data are significantly affected by recovery bias. The reality is likely to be a combination of both of these factors.

Figure 29 shows the distribution of PAS against a map containing urban areas, woodland and other non-agricultural land, demonstrating how the built-up areas of both counties are poorly represented by PAS data, as is the dense woodland associated with the Wyre Forest in the north west of Worcestershire, and to a slightly lesser extent the Forest of Arden in northern Warwickshire. These constraints on metal detecting help explain the absence of PAS data in many parts of the two counties.

Figure 30 presents the distribution of HER data in Worcestershire and Warwickshire (provided by Worcestershire and Warwickshire County Councils in March 2009). These data are more widely distributed than

PAS data, although also not evenly. Quantitative analysis of the density of the two datasets according to the different areas defined by Natural England (2009b) allows further exploration of this (**Tables 17–18**). Both PAS and HER data are well represented in the Cotswolds and the Severn and Avon Vales. The high density of PAS data in these areas can be explained by the presence of good quality agricultural land, much of which is used for arable farming (English Nature 1997b; Natural England 2009a). Such land use provides suitable areas for metal detector users to search. The high density of HER data in these areas is likely to be a combination of factors. These include archaeological work undertaken ahead of development in the numerous built-up areas and evidence from aerial photography available from the sands and gravels of the Severn and Avon floodplains.

The Midland Clay Pastures are well represented by PAS data but fairly poorly represented by data on the HER. The high density of PAS density here can be explained by the large amount of good agricultural land providing opportunities for detector users to search (English Nature 1997a). The relatively low density of HER data, especially

Table 17 Density of PAS data in the case study's distinctive Natural Areas

Natural Area	Density of PAS finds per km ²
Cotswolds	5.43
Midland Clay Pastures	3.46
Severn and Avon Vales	2.18
Midlands Plateau	1.11
Malvern Hills and Teme Valley	0.66
Trent Valley and Rises	0.26
Central Herefordshire	0

Table 18 Density of HER data in the case study's distinctive Natural Areas

Natural Area	Density of HER records per km ²
Severn and Avon Vales	1.56
Cotswolds	0.76
Midlands Plateau	0.68
Trent Valley and Rises	0.67
Midland Clay Pastures	0.61
Malvern Hills and Teme Valley	0.3
Central Herefordshire	0.19

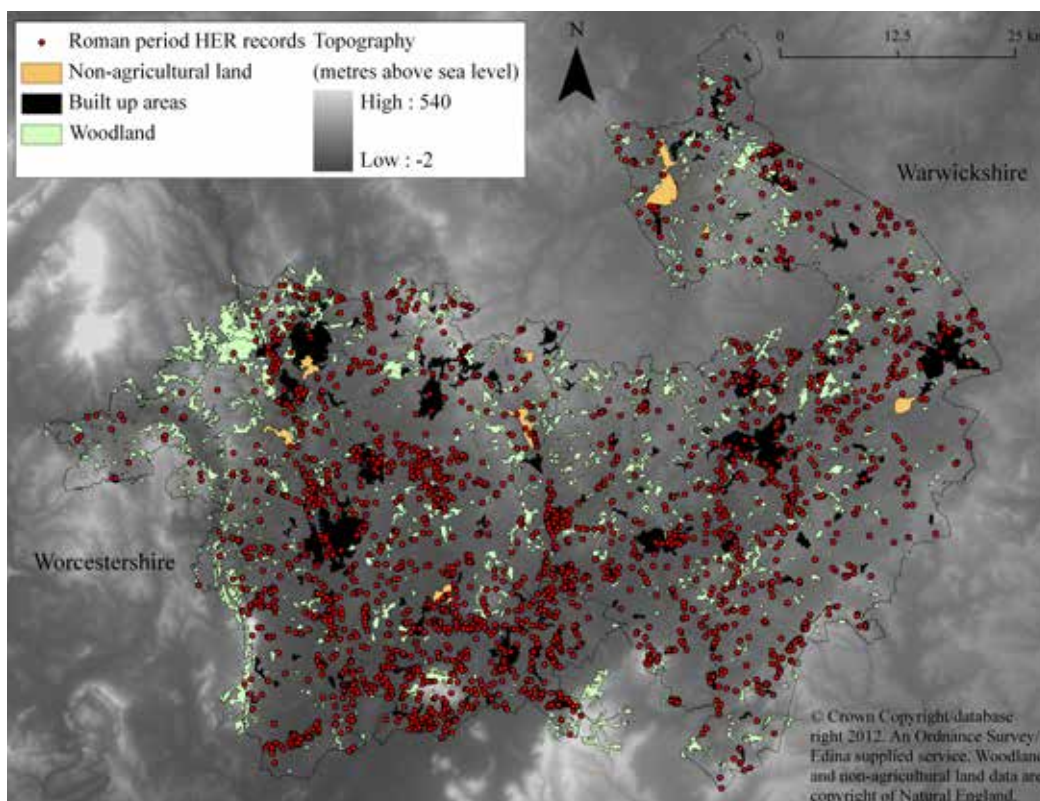


Figure 30 Distribution of Roman and late Iron Age HER records in Worcestershire and Warwickshire

when compared with the data available from the Severn and Avon Vales, is likely to reflect its rural character, where development-led archaeology has been minimal. It may also reflect a lack of evidence available from aerial photography away from the sands and gravels of the major river valleys.

The reason for the relatively low density of PAS data in the Trent Valley and Rises is somewhat uncertain. The area is characterized by good agricultural land and is not populated by extensive built-up areas, so ought to provide suitable land for metal detecting. One possibility is that detector users who search in this peripheral area find it difficult to see an FLO, as the area is some distance from the offices of the three nearest FLOs in Leicester, Birmingham and Worcester.

Central Herefordshire and the Malvern Hills and Teme Valley are not well represented by either PAS or HER records. This is likely to be a result of the land use in both areas being rural with extensive woodland which is not conducive to either metal detecting or aerial reconnaissance. The lack of large built-up areas here has also limited development-related fieldwork.

The above analysis has shown that, broadly speaking, PAS data and HER data in Worcestershire and Warwickshire have similar distributions. Kernel density analysis (an approach discussed in more detail in Chapter 3, p. 21) can help reveal further nuances.

Figure 31 reveals how dense clusters of HER data generally correspond with built-up areas and relate to development-led archaeological investigation in these areas. Particularly dense clusters occur at Alcester (Warwickshire), Worcester and Droitwich (Worcestershire). Further clusters relate to other sites that have seen fairly intensive archaeological activity, including the fort at Mancetter in

the north east of Warwickshire and the ‘small towns’ of Tiddington, Chesterton and Bidford.

PAS data are much less evenly distributed across the two counties, and all major clusters occur in Warwickshire or on the Worcestershire/Warwickshire border (**Fig. 32**). The majority of all finds reported to the FLO being from Warwickshire rather than Worcestershire (Angie Bolton pers. comm.). This may partially relate to land use, as there is approximately 50 per cent more arable land in Warwickshire than Worcestershire (based on figures presented in the June Agricultural Survey reports for 2007 and 2008 (DEFRA 2009)), meaning that there is more land available for searching in Warwickshire. An additional factor is the historic relationship between detector users and archaeologists in the two counties. In Warwickshire there has been a long tradition of liaison between metal detector users and the county’s museums service, even before the inception of the PAS (Angie Bolton pers. comm.). In Worcestershire the relationship between archaeologists and amateur metal detector users has been more strained, with mutual distrust having a lasting impact on the number of detector users in the county presenting finds to be recorded (Angie Bolton pers. comm.). In addition, in Warwickshire a number of officials of one of the main representative bodies for amateur metal detector users reside nearby and run some of the county’s metal detecting clubs, and these people have been seen as proactive in encouraging the reporting of metal detector finds to the PAS (Angie Bolton pers. comm.).

Many HER density hotspots coincide with built-up areas. Most dense clusters of PAS data do not occur within built-up areas themselves, but a number occur on rural land adjacent to towns and villages. This is particularly apparent in the Arrow and Avon Valleys in the areas around Alcester, Bidford and Welford on Avon, and also at Shipston on Stour,

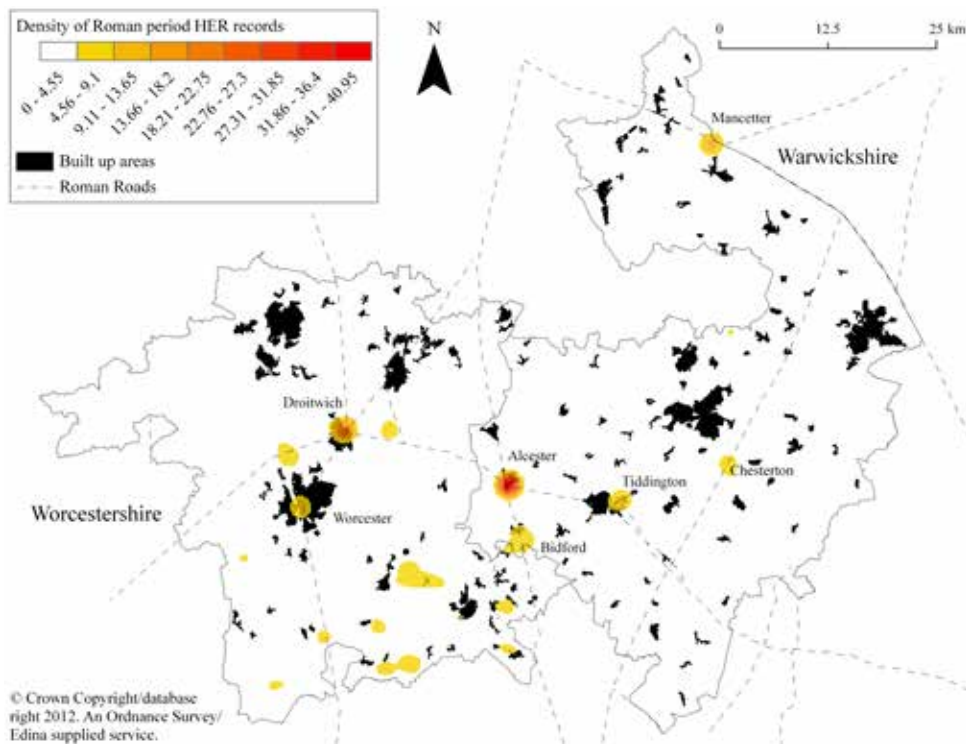


Figure 31 Kernel density plot for HER data in Worcestershire and Warwickshire

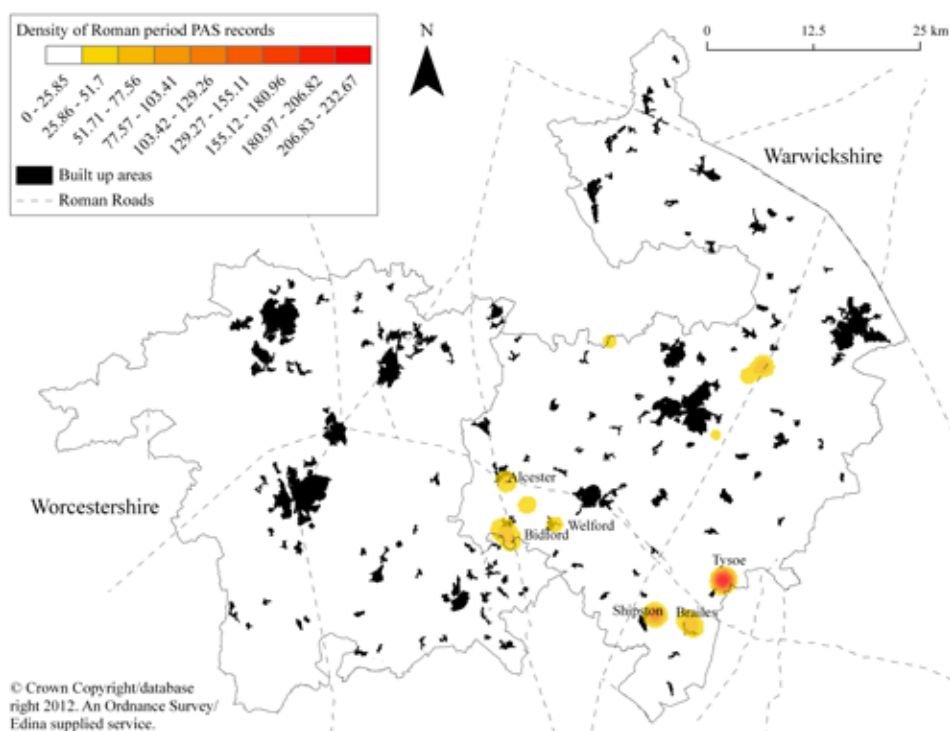


Figure 32 Kernel density plot for PAS data in Worcestershire and Warwickshire

Brailes and Tysoe. In some of these cases it seems likely that clusters of material represent intensive searching by local inhabitants on land close to where they live. At Welford on Avon a finder from the parish recovered all but one of 176 finds, as well as 298 of the 305 from the adjacent parish of Temple Grafton. Similarly, at Brailes one resident was responsible for recovering 85.9 per cent of the 495 finds from the parish (see pp. 62–6).

However, some areas attracted people from further afield. At Alcester the finds were reported by 21 finders, although 88.3 per cent of these records were recovered by a single

detector user who lives in Studley, approximately 6km to the north. Most other finders from this area are members of a Worcestershire club which occasionally holds club events in the area, and who do not appear to search in the area regularly. At Bidford 15 finders are responsible for the data. As at Alcester, a small number of individuals reported the majority of the records. Indeed, the same finder responsible for the majority of records at Alcester accounts for 47.9 per cent of the Bidford records, whilst another individual accounts for 27.6 per cent. Neither of these finders resides in Bidford, travelling from Studley and Redditch respectively to

Warwickshire				Worcestershire			Combined total		
Findspot type	Located at least 200m away from nearest HER record	Within 200m of HER record	Total	Located at least 200m away from nearest HER record	Within 200m of HER record	Total	Located at least 200m away from nearest HER record	Within 200m of HER record	Total
Single metal objects	146	29	175	71	25	96	217	54	271
Small assemblages	78	16	94	41	20	61	119	36	155
Medium assemblages	27	9	36	16	12	28	43	21	64
Large assemblages	27	24	51	6	6	12	33	30	63
Non-metal assemblages	18	3	21	13	9	22	31	12	43
Total	296	81	377	147	72	219	443	153	596

Table 19 'New' and previously known findspots in Worcestershire and Warwickshire according to findspot category (discussed in Chapter 3)

detect there, both over 10km away. Alcester and Bidford may have attracted finders from a wider area than some of the other dense clusters because they are perceived as good places to detect, occurring as they do on the Roman road network. Alcester in particular has seen extensive excavation and is widely known as a Romano-British small town.

Categorization of PAS findspots in Worcestershire and Warwickshire

The above clusters represent a small number of findspots that dominate a density analysis of the PAS data. However, it is important not to underestimate the potential importance of other findspots which are less susceptible to kernel density analysis due to smaller quantities of finds, particularly as this method provides very little information about areas of potential interest in Worcestershire. Using the methodology set out in Chapter 3, it has been possible to define a total of 596 individual findspots for Roman PAS data in Worcestershire and Warwickshire (**Table 19**). The combined medium and large groups of PAS data in Worcestershire and Warwickshire relate to up to 127 potential sites, and 76 (59.8 per cent) of these are located at least 200m from the nearest HER record, and have therefore been identified as 'new' sites. Because there are problems with identifying the total number of sites represented by records on the HER, data on Roman sites provided by the National Monuments Record (NMR) have been used here to consider the impact that PAS data have on our understanding of the number of sites in the two counties. The NMR data suggest that there are 250 individual Roman sites known from Worcestershire and Warwickshire, ranging from small rural settlements to towns. The 76 new sites represented by PAS data therefore represent a potential increase of 30.4 per cent, whilst providing additional information for a further 20.4 per cent.

The composition of medium and large groups of PAS data in Worcestershire and Warwickshire

Tables 20–1 summarize the composition of large and medium groups of metalwork. Coins dominate most assemblages and are absent at only seven of the findspots. Some findspots represented by fairly low numbers of metal artefacts are also well represented by non-metal finds, and low quantities of metalwork do not necessarily reflect low levels of activity. For example, three coins and five dress accessories have been recorded from Wroxall, yet 143 ceramic sherds recovered from the same location may suggest settlement.

A small number of findspots have been selected as localized case studies discussed below, but many have the potential for more detailed analysis. For example, at Inkberrow (Worcestershire) 49 coins, 19 dress accessories and one other metal artefact were recovered around 250m south west of a series of enclosures known from aerial photography, interpreted as probable field boundaries (Worcestershire HER no. WSM00808). A small-scale archaeological field evaluation carried out within around 100m of the metal detector finds recovered eight Romano-British pottery sherds and an unidentified metal object of possible Roman date (along with a small number of post-medieval ceramics), and these were interpreted as possible manure scatters associated with nearby settlement, perhaps associated with the enclosures to the north (Worcestershire HER no. WSM29053). The fairly large assemblage of metal detector finds recorded on the PAS database potentially provide a location for this settlement, and chronological evidence provided by the coins and artefacts on the database suggest activity from the mid to late 1st century AD until the mid 4th century AD. Several medieval and post-medieval coins and buckles recorded on the PAS database attest to renewed later activity, although there is nothing on the database to indicate continuity of settlement from the Roman to early medieval period. Here

Findspot	C	D	Cer	O	Total	Findspot	C	D	Cer	O	Total
Alcester Central 1	6	2	0	4	12	Princethorpe Central	226	2	0	0	228
Alcester Central 2	75	17	0	5	97	Princethorpe South	73	12	0	4	89
Alcester Central 3	35	4	0	0	39	Radford Semele	131	0	2	0	133
Alcester Central 4	27	5	0	1	33	Salford Priors East	22	2	0	1	25
Alcester Central 5	17	1	0	0	18	Tanworth in Arden North East	10	3	0	1	14
Alcester Central 6	17	2	0	0	19	Temple Grafton North West 1	12	5	0	0	17
Alcester North West	31	13	2	3	49	Lapworth South	12	0	0	0	12
Alcester South West 3	31	12	2	3	48	Middleton North 1	5	4	1	2	12
Alderminster	43	1	55	2	101	Temple Grafton North West 2	131	27	5	8	171
Aston Cantlow	57	19	2	2	80	Temple Grafton Central	10	1	0	0	11
Barcheston	9	2	0	1	12	Wappenbury North	12	2	0	1	15
Bidford East	17	3	0	3	23	Welford East	139	11	17	2	169
Bidford East of Road	20	7	0	2	29	Wappenbury South 2	60	9	2	4	75
Bidford North	14	2	0	0	16	Wixford North	8	2	0	4	14
Bidford North East	6	9	0	0	15	Wixford East	18	3	0	0	21
Bidford North	14	2	0	0	16	Wixford North	8	2	0	4	14
Bidford North East	6	9	0	0	15	Wixford East	18	3	0	0	21
Bidford North West	24	1	2	0	27	Warmington	6	4	0	2	12
Bidford South 1	123	17	0	0	140	Rous Lench	4	6	0	1	11
Bidford West 1	108	1	8	2	119	Warwick South East Central	32	5	0	0	37
Bidford West 2	13	4	46	1	64	Welford West	11	1	0	0	12
Billesley Central	22	2	3	6	33	Pershore Central	31	9	5	5	50
Binton South	11	3	0	0	14	North and Middle Littleton	43	6	15	2	66
Bourton and Draycote	13	5	9	1	28	Longdon North Central	9	10	3	0	22
Ilmington Central	30	8	0	2	40	Kingsbury South West 2	10	21	6	6	43
Brailes east of village	30	24	124	4	182	Leigh Central	17	12	5	9	43
Brailes north of village	156	45	60	13	274	Inkberrow	49	19	0	1	69
Brailes south of village	22	2	0	0	24	Great Witley	27	0	0	0	27
Brandon and Bretford Central	21	2	0	0	23	Cleeve Prior North West	32	11	3	4	50
Burmington	10	2	0	1	13	Bredon North	25	2	0	0	27
Frankton	17	0	0	0	17	Bickmarsh South	42	5	0	3	50
Grandborough North	0	10	35	3	48	Bickmarsh North	69	12	3	2	86
Honnington	306	15	170	18	509	South Littleton North East	41	12	18	3	74
Kineton North	62	7	0	0	69						

Table 20 Summary of assemblage composition of large PAS findspots in Worcestershire and Warwickshire (11 metal artefacts or more). C = coins, D = dress accessories, Cer = ceramics, O = other

then, the PAS data compliment that held on the HER significantly, providing a possible focus for Romano-British settlement and a broad chronology for the activity.

At Hampton Lovett, also in Worcestershire, a medium-sized assemblage includes figurines of Mars (WMID₄₁), a panther (WMID₃₉) and a sphinx (WMID₄₀). These finds were recorded early in the history of the PAS and the records lack detail and images which consequently restricts interpretation. Nonetheless, the occurrence of a group of objects with likely religious associations 2km north of Roman Droitwich is noteworthy.

Although many of these individual assemblages might

repay detailed investigation, **Figure 32** has shown how a cluster of medium and large PAS assemblages in the Alcester area dominates the distribution.

The large quantity of data have much potential for exploring settlement in the area surrounding a Romano-British ‘small town’ and this forms the focus for the first of the two localized case studies in this chapter. The second case study, from Brailes, Warwickshire, focuses on a less extensive area, but one which has been intensively searched and meticulously recorded, providing the opportunity to explore nuances in the distribution of artefact scatters where grid references have been recorded with an extremely high level of precision.

Findspot	C	D	Cer	O	Total	Findspot	C	D	Cer	O	Total
Alcester North	7	1	0	0	8	Bishampton	4	1	0	1	6
Alcester West 1	5	0	0	0	5	Bredon South	3	2	0	1	6
Bidford Central South	4	1	0	0	5	Bromsgrove West	5	0	0	0	5
Bidford South 2	6	0	0	0	6	Broome East	3	2	0	0	5
Billesey South	5	2	31	0	38	Burton Dassett	0	5	2	9	16
Binton Central 2	2	2	0	1	5	Burton Hastings	2	2	0	1	5
Brailes North East	4	3	0	1	8	Chaddesley Corbett South East	1	4	12	0	17
Brailes South 2	5	0	0	0	5	Claverdon	4	4	0	2	10
Dunchurch Central	0	1	0	5	6	Cleeve Prior East Central	3	1	0	0	4
Dunchurch South	0	8	0	0	8	Copston Magna	4	0	0	2	6
Grandborough Central	0	5	0	1	6	Droitwich East	0	4	7	3	14
Harbury Central 1	6	2	14	0	22	Earls Croome East	3	1	0	0	4
Kenilworth East	4	1	0	0	5	Great Comberton	4	1	0	1	6
Kings Newnham	4	2	1	0	7	Hampton Lovett Central	0	0	0	5	5
Lapworth East	2	3	0	0	5	Hartlebury	1	4	1	0	6
Middleton North 2	4	3	0	1	8	Honeybourne	2	2	0	1	5
Nuneaton Town	7	0	0	0	7	Inkberrow Central	2	4	2	1	9
Polesworth	3	2	0	1	6	Inkberrow Central 2	5	4	0	0	9
Rowington Central	3	6	0	1	10	Kempsey 1	2	2	1	5	10
Rowington North 8	7	0	0	0	7	Kidderminster Foreign Central	5	0	0	0	5
Shotteswell	5	1	2	1	9	Leigh Central North	3	3	6	1	13
Stoneleigh North West 1	2	7	22	0	31	Leigh North	6	2	0	2	10
Stoneleigh North West 2	10	0	0	0	10	London South	3	5	5	2	15
Tanworth in Arden South West	3	3	2	2	10	Lulsey	2	6	22	1	31
Tanworth in Arden West Central	3	2	0	1	6	Netherton	3	1	0	1	5
Wappenbury Central	7	1	13	0	21	North Claines Centre	4	2	0	0	6
Wappenbury South	5	0	0	0	5	Norton and Lenchwick	3	0	3	4	10
Warwick South Central	4	2	0	0	6	Upton Snodsbury East 1	1	4	0	1	6
Welford Central	3	3	0	2	8	Upton Upon Severn South West	1	3	0	1	5
Welford Far West	8	0	0	0	8	Upton Upon Severn West 1	1	8	0	0	9
Wixford Central	4	6	0	0	10	White Ladies Aston South	5	4	10	0	19
Wroxall	3	5	143	0	151	Wyre Piddle	3	3	0	1	7

Table 21 Summary of assemblage composition of medium PAS findspots in Worcestershire and Warwickshire (5–10 metal artefacts). Note the category ‘other’ includes non-metal artefacts, which takes the total number of finds above 10 in some cases. C = coins, D = dress accessories, Cer = ceramics, O = other

Localized case study: Alcester and the Arrow and Avon Valleys

This case study covers an area of 225km², encompassing the Roman small town of Alcester, the possible nucleated settlement at Bidford on Avon and a number of other known Romano-British sites (**Fig. 33**). This is a large area compared to many of the other micro-level case studies, but the data are so dense here that they are worth exploring. This case study illustrates a slightly different approach which lies somewhere between broad regional analysis and detailed local analysis focusing on single or very small numbers of findspots.

Alcester is one of the best-understood Roman small towns in Britain, having been subject to a number of development-

led investigations (Cracknell and Mahany 1994; Mahany 1994; Cracknell and Allen 1996; Booth and Evans 2001). The excavations have produced only minimal evidence for Iron Age activity, and the town’s development is seen as linked to the presence of 1st-century AD military activity, with a fort known from the south of the town and a further unproven fort suggested by military material from the northern area of the town (Booth and Evans 2001, 301–2). The town became an important nucleated settlement with defences constructed in the 2nd century AD and extended by a wall in the late 4th century AD (Cracknell and Allen 1996). It seems likely to have served as an important market and perhaps also as a local administrative centre (Booth 2001, 4).

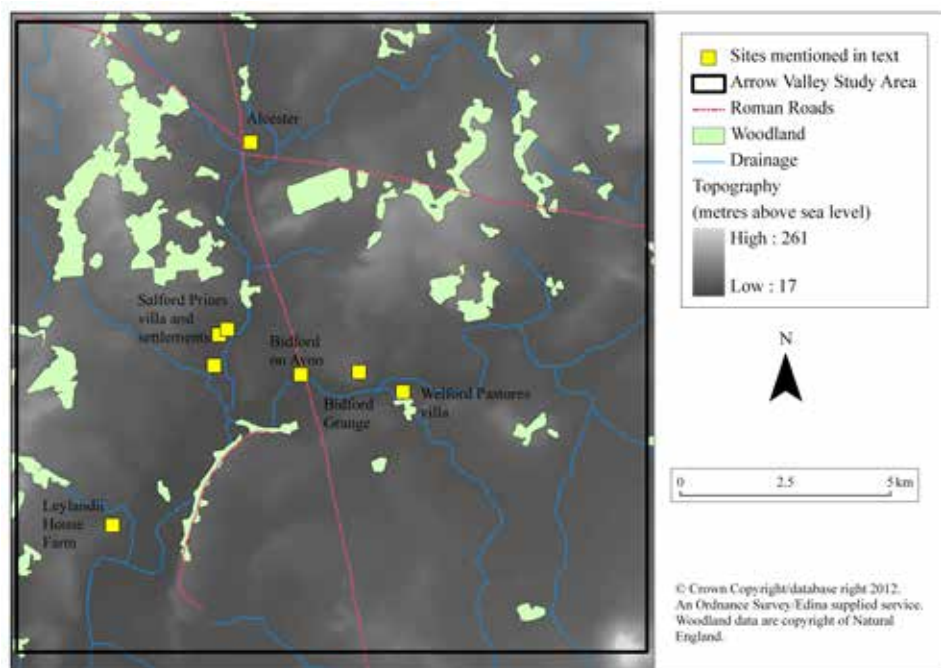


Figure 33 Map of the Alcester study area showing sites mentioned in the text

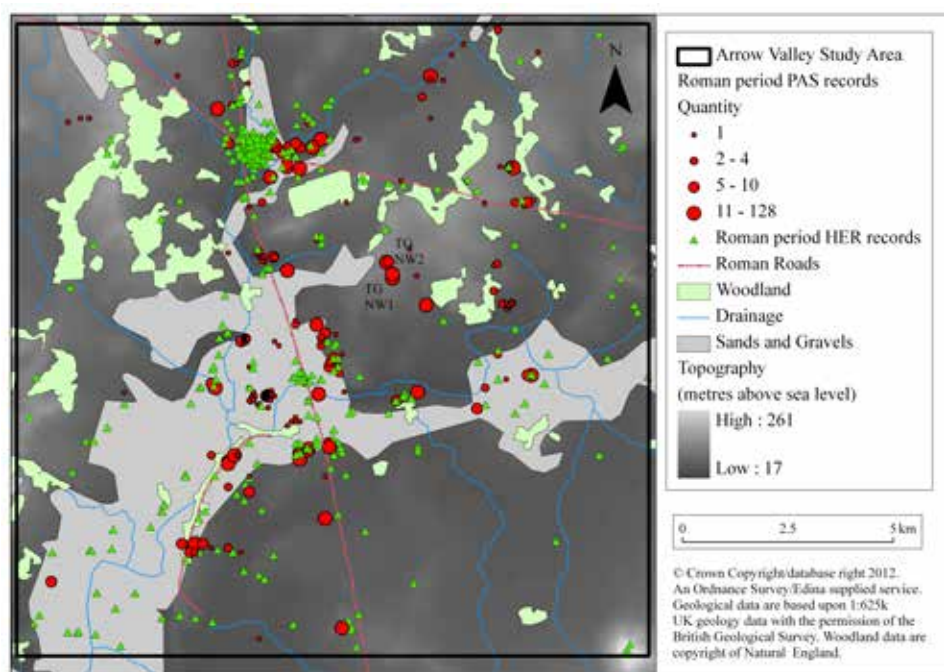


Figure 34 Distribution of PAS data in the Alcester case study area

Around 6km south of Alcester, on Ryknild Street, what appears to have been a minor nucleated settlement was located at Bidford on Avon, and this site may also have had some importance as a local market (Booth 1996, 39). Here, it has been suggested that the site developed from Iron Age occupation (Palmer 1999, 8) and went on to become a locally important early medieval settlement (Naylor and Richards 2010).

Two kilometres west of Bidford, at Salford Priors, three mid to late 1st-century AD settlements were excavated ahead of road construction, one of which became a villa in the 3rd century AD (Palmer 1999). Another possible villa in the case study area is located at Welford on Avon, although this is known only from cropmarks and surface scatters of finds (including those reported by metal detectorists) (Palmer 1999, 219). A number of low status rural settlements have also

been excavated in the case study area. At Leylandii House Farm (Norton and Lenchwick) three round houses were apparently occupied from the 2nd to the mid 3rd century AD (Palmer 1999, 8).

The methodology presented in Chapter 3 has allowed recognition of 85 distinct PAS findspots within the case study area (**Fig. 34** and **Table 22**).

There are a total of 43 medium and large findspots, the only groups that can realistically be considered to relate to potential settlement activity. Whilst some of these may represent distinct areas of activity it seems possible that some are parts of the same scatter of material, particularly where they occur in fairly close proximity to one another in the vicinity of known settlements at Alcester and Bidford.

The distribution of PAS data is predominantly focused on the low-lying gravel terraces associated with the river

Parish	Large findspot within 200m of HER record	Large findspot at least 200m from nearest HER record	Medium findspot within 200m of HER record	Medium findspot at least 200m from nearest HER record	Small findspot within 200m of HER record	Small findspot at least 200m from nearest HER record	Single find within 200m of HER record	Single find at least 200m from nearest HER record	Non-metal artefacts within 200m of HER record	Non-metal artefacts at least 200m from nearest HER record	Total
Alcester	5	3	2	0	1	0	3	3	0	0	17
Aston Cantlow	1	0	0	0	0	1	0	7	0	0	9
Bidford	5	3	1	1	1	2	2	3	0	0	18
Billesley	1	0	1	0	0	0	1	0	0	0	3
Binton	0	1	0	1	0	1	0	1	0	1	5
Salford Priors	1	0	0	0	0	1	1	0	0	0	3
Temple Grafton	0	3	0	0	0	0	0	2	0	2	7
Welford on Avon	1	1	1	1	0	2	0	1	0	0	7
Wixford	1	1	0	1	0	0	0	0	0	0	3
South Littleton	1	0	0	0	0	0	0	1	0	0	2
Norton and Lenchwick	0	0	0	1	0	0	0	0	0	0	1
Cleeve Prior	1	0	0	1	1	0	1	0	0	0	4
Bickmarsh	1	1	0	0	0	0	0	0	0	0	2
North and Middle Littleton	1	0	0	0	1	0	0	0	1	1	4
Total	19	13	5	6	4	7	8	18	1	4	85

Table 22 Categories of PAS findspot in the Alcester case study area

valleys, with additional groups occurring alongside the known Roman roads (**Fig. 34**). The tendency for evidence for Romano-British settlement to be associated with the river gravels in this area has been noted (Hunt 1982; Palmer 1999, 219) and the distribution of Romano-British HER data is similar to that of the PAS (**Fig. 34**). This has been suggested by some to be a result of a lack of field survey away from the river valleys and a greater susceptibility for the gravels to produce crop marks (Hunt 1982, 2).

However, others have suggested that much of the area may have been wooded, particularly as the area was part of the Forest of Arden in the medieval period (Palmer 1999, 219). Whilst the PAS data do not dramatically alter the picture presented by other archaeological evidence, a small number of findspots suggest that settlement was not confined to the low lying river valleys. At Temple Grafton, the large findspots ‘Temple Grafton North West 1’ (TGNW₁) and ‘Temple Grafton North West 2’ (TGNW₂) are located on a south-facing hillside some distance from the gravel terraces, in an area where HER data are poorly represented. The large quantities of coinage and other artefacts from these findspots (**Table 20**), particularly TGNW₂, suggest that this

area witnessed significant activity. Such findspots may not radically alter the general picture, but they do provide additional evidence for settlement not directly associated with the gravel terraces.

In an area so well represented by HER data, it is reasonable to question the value of PAS data, particularly when the two datasets have comparable distributions. However, 19 (44.4 per cent) of the large and medium assemblages from the case study area occur at least 200m from the nearest HER record, and so are adding to the pattern and not simply repeating it. Where PAS data have added value is in the detail with which finds are recorded, particularly as many records of publicly derived archaeological material on the HER are sometimes described very vaguely. As many of the finds recorded on the PAS database can be dated relatively closely this allows consideration of the chronological pattern of settlements in the area surrounding Alcester. Looking at all potential ‘sites’ and utilizing data from coins and brooches (the most common artefacts recovered and those for which dating is relatively secure) the PAS assemblages from most findspots in the study area suggest activity throughout the Roman

Date range	Number of 'sites'
Late Iron Age–early Roman	1
Late Iron Age–4th century AD	10
1st–4th century AD	4
1st/2nd–4th century AD	6
2nd–4th century AD	9
Pre-AD 260–4th century AD	8
Late 3rd–4th century AD	3
4th century AD	2
Total	43

Table 23 Broad chronological evidence for PAS findspots in the Alcester case study area based on coin and brooch data

period (**Table 23**). Only one site (2.3 per cent) produced Iron Age and early Roman artefacts, but nothing beyond the 2nd century AD. Sites with 1st- or 2nd-century AD artefacts which continued until the 4th century AD collectively account for 23.3 per cent, with a further 20.9 per cent producing artefacts of a definite 2nd century AD onwards date. An

additional 18.6 per cent included early Roman finds where only a broad 'pre-AD 260' date range was provided and these too produced evidence up until the 4th century AD. Seven per cent produced evidence no earlier than late 3rd to 4th century AD, and only two sites (4.7 per cent) were represented by nothing earlier than 4th century AD.

Based on the broad chronological evidence provided by the PAS finds the pattern in the study area seems to have been one of continuation of activity throughout the Roman period at sites established in the 1st or 2nd centuries AD, and in many cases it seems that there was continuity from the late Iron Age. This chronological evidence is broadly in line with that suggested from some of the excavated rural sites in the study area. A farmstead at Bidford Grange, for example, produced evidence from the 1st to 4th centuries AD (Palmer 1999, 8; Booth 2001, 6). Indeed, this pattern is represented in many parts of southern Britain, particularly where extensive excavation ahead of gravel extraction has revealed large numbers of Romano-British rural sites of similar chronologies, with sites occupied from the late Iron Age or early Roman period continuing until the 4th or 5th centuries AD (Fulford 1992, 38).

Table 24 Composition of coin assemblages from six PAS findspots and excavations at Alcester

Date (AD)	Reece period	Alcester Central 2	Aston Cantlow	Bidford West 1	Bidford South	Temple Grafton North West 2	Bickmarsh South	Alcester town excavations
–41	1	2	1	0	0	0	1	8
41–54	2	0	0	0	0	0	0	14
54–69	3	0	0	0	0	0	0	5
69–96	4	0	0	0	0	0	0	30
96–117	5	1	0	0	0	0	0	15
117–38	6	1	0	0	0	0	0	12
138–61	7	2	0	1	0	0	0	13
161–80	8	1	0	0	1	0	0	8
180–93	9	0	0	0	0	0	0	1
193–222	10	3	1	0	0	0	1	7
222–38	11	0	0	1	0	2	0	2
238–60	12	0	0	0	0	1	0	3
260–75	13	1	0	3	6	0	1	93
275–96	14	1	2	3	2	2	0	80
296–317	15	0	0	4	1	2	0	22
317–30	16	1	2	4	1	1	2	29
330–48	17	8	7	10	12	14	14	180
348–64	18	5	3	8	16	5	6	99
364–78	19	1	5	21	7	2	14	55
378–88	20	0	0	1	0	0	0	4
388–402	21	0	0	2	2	0	0	12
402+	22	0	0	0	0	0	0	0
Total number of coins with Reece Ids		27	21	58	48	29	39	692

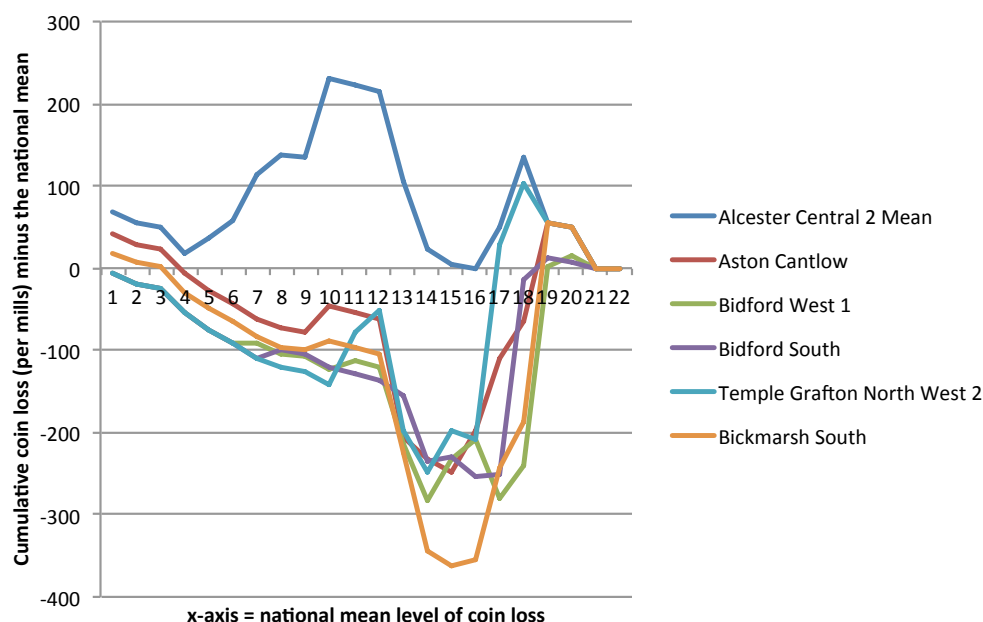


Figure 35 Coin profiles for six PAS findspots in the Alcester case study area showing coin loss against Reece's national mean (x-axis). See Reece 1995 for a full discussion of the method

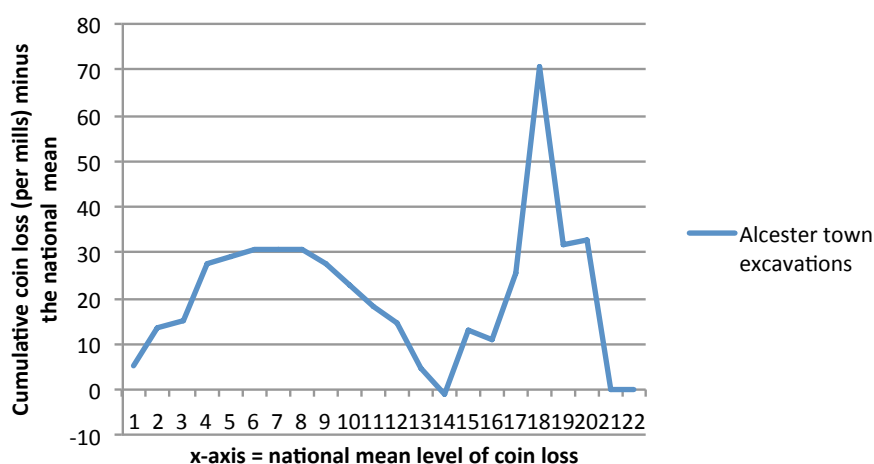


Figure 36 Coin profile for coins from combined excavations at Alcester, showing coin loss against Reece's national mean (x-axis). See Reece 1995 for a full discussion of the method

Whilst activity at many of the findspots occurred throughout the Roman period it is important to remember that we are dealing with unstratified, haphazardly gathered material, and there would undoubtedly have been changes at most settlements during the Roman period that we cannot hope to recognize through the PAS data. Excavations at three settlements in Salford Priors have shown how there was considerable development during the Roman period which involved the disappearance of two of the settlements in the 2nd century AD and the development of one into a villa (Palmer 1999).

At most of the findspots in the case study area attempts at formal coin analysis adds little to the above chronological pattern. However, this has been undertaken for those findspots with sufficient coins to make this worthwhile (see Chapter 3 for a detailed discussion of the methodology). Only six of the findspots have sufficient coins (over 20) to be included (**Table 24**). The coin profiles for these six groups (**Fig. 35**) show two patterns. One is displayed by five of the six findspots (Aston Cantlow, Bidford West 1, Bidford South, Temple Grafton North West 2 and Bickmarsh South), and is characterized by low levels of coin loss until the mid 4th century AD and all of the findspots peak in periods 17, 18 or 19 (see **Table 24** for dates for Reece periods).

The other pattern is only seen at Alcester Central 2 and shows coin loss at a rate that is higher than the national average between periods 4 and 10, a significant dip between periods 13 and 16 and a rise again in periods 17 and 18. A coin profile produced for Alcester based upon coinage recovered from several excavations in the town shows initial coin loss at a level above the national average before levelling out between periods 4 and 8. It then dips between periods 9 and 14, and recovers from period 15, peaking at period 18 in the mid 4th century AD.

Based on comparison with the coin profiles from the other PAS findspots and the profile from Roman Alcester (**Fig. 36**), it seems likely that the difference between Alcester Central 2 and the other PAS findspots which display characteristically rural coin profiles is related to its close proximity to the town. Located around 700m to the south east of the settlement's known extent, it seems a little too far from the town to represent activity within the nucleated settlement itself, but it may possibly relate to settlement in the immediate vicinity of the town, at a site that had a close relationship with the centre. The findspot is represented by a total of 97 artefacts on the PAS database, which may suggest some intensive activity here.

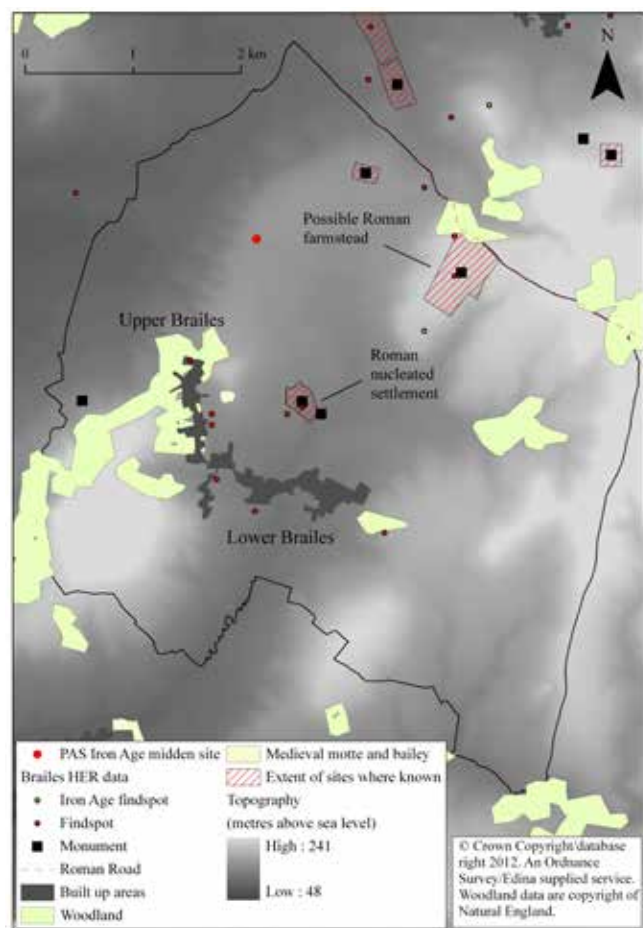


Figure 37 Distribution of known archaeological sites in Brailles

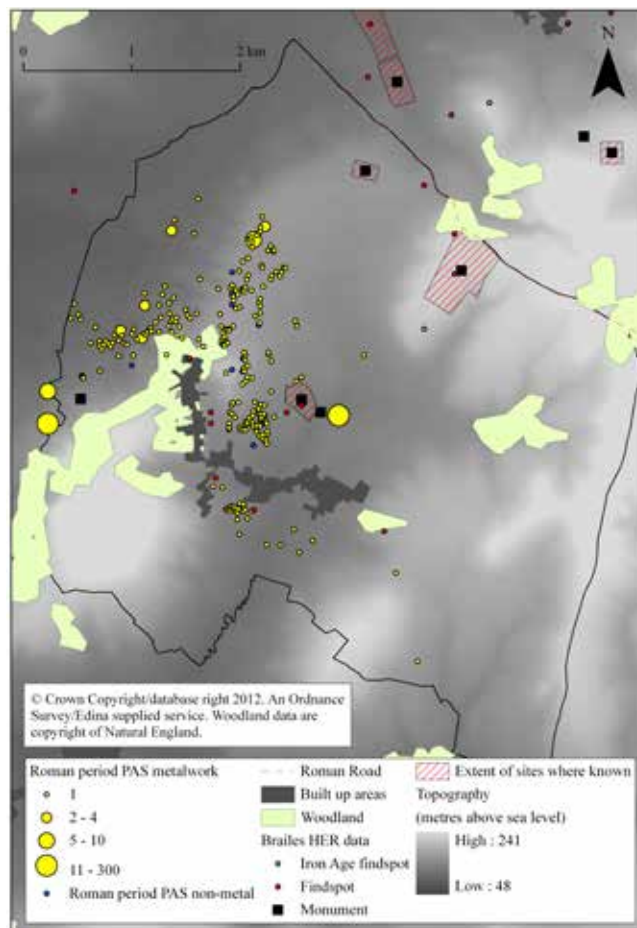


Figure 38 Distribution of Roman PAS data in Brailles

It is important to remember that the sample of coins at the PAS findspots from which the coin profiles are derived is really quite small, especially when compared to the total from Alcester (**Table 24**). Even small numbers of coins from particular periods can have quite a dramatic effect on the coin profiles. Still, the stark difference between Alcester Central 2's profile and the other PAS findspots may reflect a perhaps obvious correlation between the proximity of a site to a town and the influence this has on the site's economy.

Aside from the clear difference in the coin profiles between Alcester Central 2 and the other PAS findspots, there also appears to be a subtle difference in the types of brooches from different sites. Comparing the brooch types present at Alcester Central 2 with those from Temple Grafton North West 2, one of the PAS findspots with a typically rural coin profile, the latter is dominated by Colchester two-piece brooches. Whilst this is also the case at Alcester Central 2, this findspot is also represented by a number of disc brooches (WAW-B70725, WMID396, WMID500, WMID496) and a crossbow brooch (WAW-FE4947). It is difficult to determine whether this is of any real significance, but there is a possibility that it reflects access to a greater range of brooch types for the occupants of Alcester Central 2, perhaps because of a closer relationship with the market centre.

The 225km² area explored in this case study was clearly densely populated during the Roman period. This was well understood from evidence from aerial photography and

excavation and PAS data have not radically altered the pattern previously recognized. However, the PAS findspots have suggested a number of potential foci for activity, some of which were not previously recorded, providing a better understanding of the density of settlement in the area. Combined, the 19 new PAS sites and 65 HER sites from the area suggest a settlement density of 0.4 sites per km², an increase from the 0.3 sites per km² suggested by the HER data alone. This suggests that even in an area where aerial photography has revealed a densely settled landscape the method cannot be relied upon to recover the full settlement pattern and PAS data can augment this considerably. The PAS data have also allowed a discussion of the chronological development of what are probably rural sites, allowing the suggestion that most saw activity throughout the Roman period and some appear to have developed from late Iron Age activity.

Localized case study: Brailles

Brailles is situated in south Warwickshire, on the border with Oxfordshire. The parish is notable for Brailles Hill, which at 230m above sea level is the second highest point in Warwickshire. The two villages, Upper and Lower Brailles are in a valley enclosed by an arc of hills. A stream, Sutton Brook, flows south through the valley with a number of tributaries emerging from the steep surrounding hills. Just to the south of the parish, at Stourton, the Sutton Brook joins the River Stour. The eastern border of the parish is formed by the Salt Way Roman road.

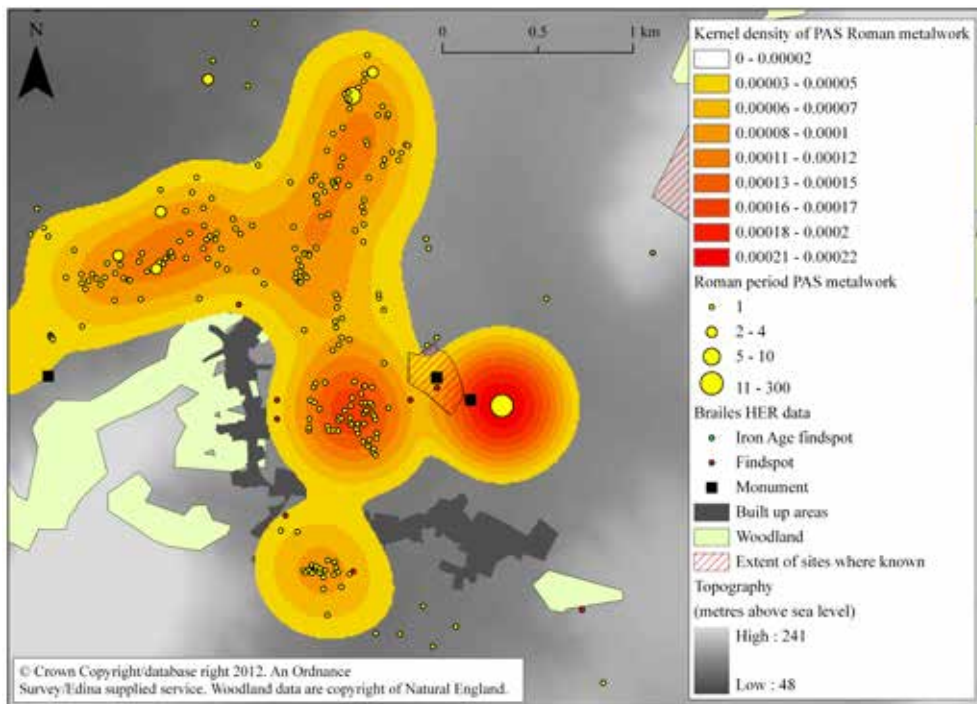


Figure 39 Kernel density plot for PAS data in Brailes, search radius of 500m²

Brailes is represented by a number of records on the HER, and the presence of a possible Romano-British nucleated settlement has been suggested (Booth 1996; 2001). The main area of the settlement is recorded 500m north of Lower Brailes, where field survey and limited excavation has been undertaken sporadically since the 1960s (Hingley 1986; 1987) (**Fig. 37**). The site is recorded as being a possible villa (Scott 1993, 179), but there is insufficient structural evidence for this attribution to be made with confidence. Amongst Romano-British finds of 2nd- to 4th-century AD date, excavations revealed evidence for stone flooring in some areas.

Results from extensive fieldwalking programmes have suggested that the site occupied an area of as much as 25 hectares (Hingley 1987, 44) with material possibly representing distinct clusters of buildings (Hingley 1986, 53–4). Elsewhere in the parish, at Winderton, a further two reputed Iron Age to Romano-British farmsteads are recorded next to the Roman road, although there is limited information available about either of these.

Aside from the Roman material recorded on the HER, Brailes is noteworthy for a late Bronze Age to Iron Age midden site, initially identified through PAS finds and then subject to fieldwalking and geophysical survey (Portable Antiquities Scheme 2005, 29). Work at the site has yet to be published in detail, but the geophysics results revealed an enclosed group of huts overlying field boundaries. The site has provisionally been interpreted as a late Bronze Age settlement, with continued activity and gradual settlement shift in the early Iron Age (Angie Bolton pers. comm). Other non-Roman archaeological sites in the parish include the earthwork remains of a medieval motte and bailey, located to the east of Upper Brailes.

The vast majority of finds recorded on the PAS database from Brailes have been recovered by a single individual, the same person responsible for recovering the Bronze Age and Iron Age material noted above. Of 317 items of late Iron Age and Roman metalwork recovered from the parish, this

person reported 237 (74.8 per cent). A further 70 (22.1 per cent) were reported by another individual, whilst only 9 artefacts (2.9 per cent) were reported by others. The two finders responsible for the majority of finds on the database have used GPS devices and reported most finds to ten figure grid references, and the precisely recorded distribution of finds provides a case study with a best case scenario in terms of locational information.

The methodology presented in Chapter 3 has allowed the recognition of 12 individual findspots in Brailes. Four of these are single finds of metalwork, three are small groups, two are medium groups and there are three large groups. However, in an area so well represented by data, and where the locational information is so precise, the methodology used in many of the other case studies (and presented in Chapter 3) is not entirely appropriate. Whilst the methodology has identified 12 distinct findspots, the finds form what appears to be an almost continuous distribution over parts of the parish (**Fig. 38**).

In some areas it appears only to be modern land use that interrupts the distribution and it seems likely that some of the gaps in the distribution are artificial, caused by constraints on searching including woodland and the modern villages.

The finder responsible for the largest group of material reported to the PAS also explained that there were other finders who searched the area south of Lower Brailes but who did not regularly report finds to the PAS (finder pers. comm.), and this must also contribute to the distribution pattern of the finds. Encouragingly, this finder said he believed he was the only person responsible for searching in the areas where he had permission, so we can be reasonably sure that most artefacts to have been recovered from these areas have been reported.

The PAS data in Brailes are distributed over several hundred hectares. If we were to take the extent of the distribution of scattered PAS finds as evidence for the extent

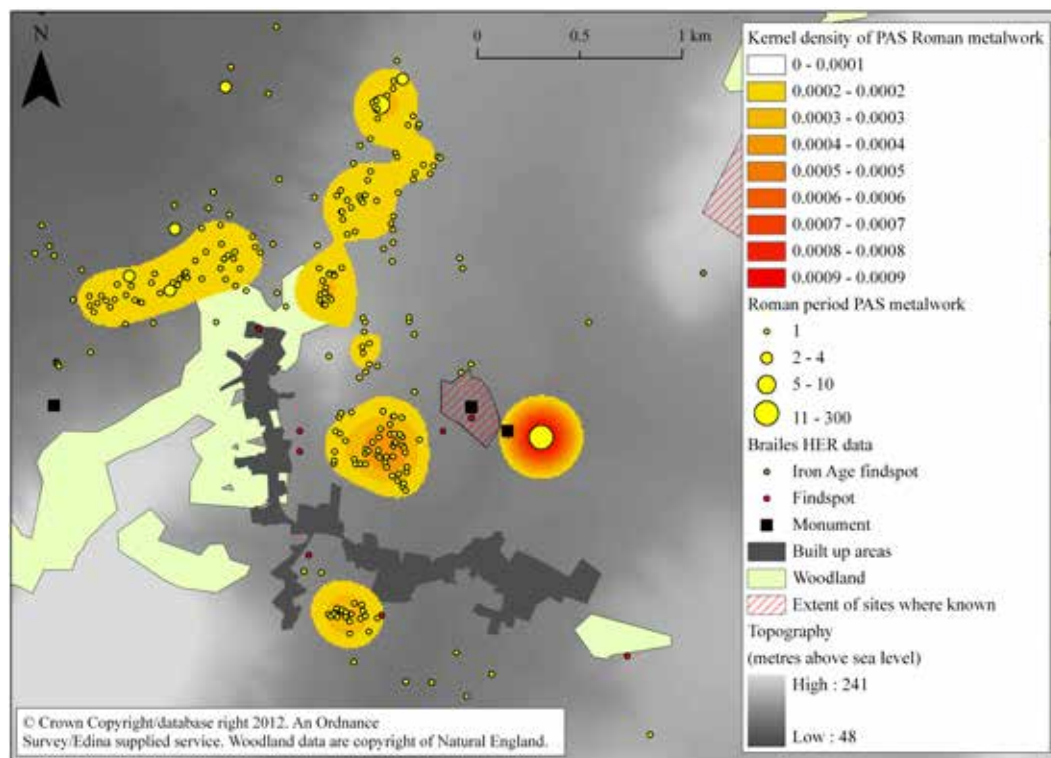


Figure 40 Kernel density plot for PAS data in Brailles, search radius of 250m²

Table 25 Coinage from five clusters of PAS data in Brailles

Date (AD)	Reece period	North-west cluster	North-east cluster	Central cluster	South cluster	East cluster
-41	1	0	2	1	0	3
41-54	2	0	0	0	0	0
54-69	3	0	0	0	0	0
69-96	4	0	0	0	0	0
96-117	5	0	0	0	0	1
117-38	6	0	1	0	0	0
138-61	7	1	0	0	1	0
161-80	8	2	0	1	0	0
180-93	9	1	0	0	0	0
193-222	10	1	0	0	0	1
222-38	11	0	0	0	0	0
238-60	12	0	1	0	0	0
260-75	13	1	2	0	0	0
275-96	14	2	2	1	1	1
296-317	15	1	0	1	2	0
317-30	16	3	2	1	2	2
330-48	17	5	12	4	5	3
348-64	18	3	0	1	0	2
364-78	19	1	1	1	1	0
378-88	20	0	0	0	0	0
388-402	21	0	0	0	0	0
402+	22	0	0	0	0	0
Total		21	23	11	12	13

of one settlement, then it would suggest a site of highly unusual size, far greater than the 25 hectares suggested by Hingley (Hingley 1987, 44). It seems more likely that the wide distribution includes some 'off-site' material in the immediate landscape surrounding several small settlements.

This raises the issue of how one can differentiate between off-site scatters and material associated with settlement itself. One way is to try to isolate clusters within the wider distribution. This has been attempted here through GIS based kernel density analysis, a method discussed in more detail in Chapter 3 (see p. 21).

One issue associated with kernel density analysis is that the parameters for the spatial analysis are user defined, and using different search criteria will produce different results. For this reason, two analyses have been undertaken, one using a search radius of 500m² (Fig. 39) and another using 250m² (Fig. 40). Although the results differ, what they both show is that there are clear clusters in the distribution of the data.

There are a range of factors which may have contributed to the creation of these apparent clusters. These range from the decisions made by the detector user as to where to search, to topographical and other restrictions on where it has been possible to search and post-depositional movement of artefacts through geomorphological and animal movement (see Chapter 3, pp. 17-18). It is therefore clearly important to be aware of the fact that these issues may have an impact on the distribution of the data.

Yet it is also possible that the areas in which PAS data are most dense genuinely represent foci for activity. The clusters are chiefly associated with the hillsides, suggesting a preference for these locations rather than the valley floors. This is supported by anecdotal evidence by the principal finder from the area, who explained that he had searched in fields on lower terrain and that these had a tendency to produce noticeably fewer artefacts (finder pers. comm.).

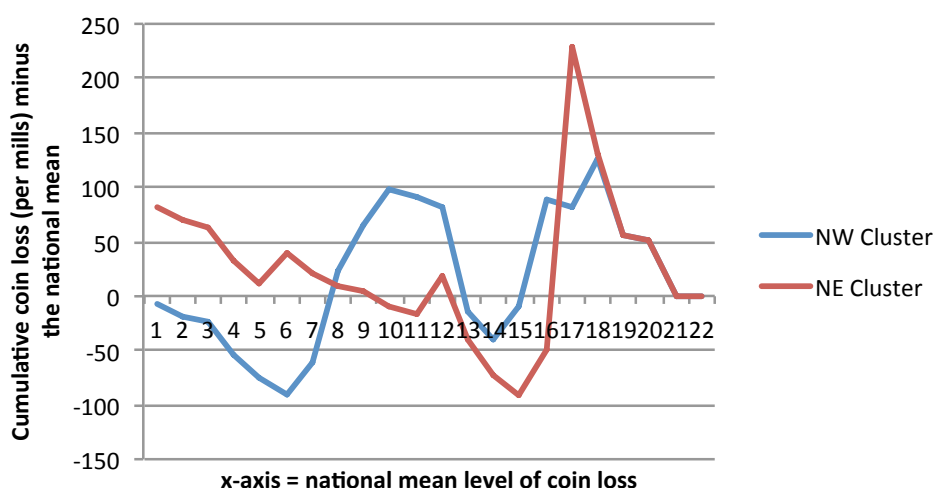


Figure 41 Coin profiles for the north-west cluster and north-east cluster in Brailles (x-axis = British mean)

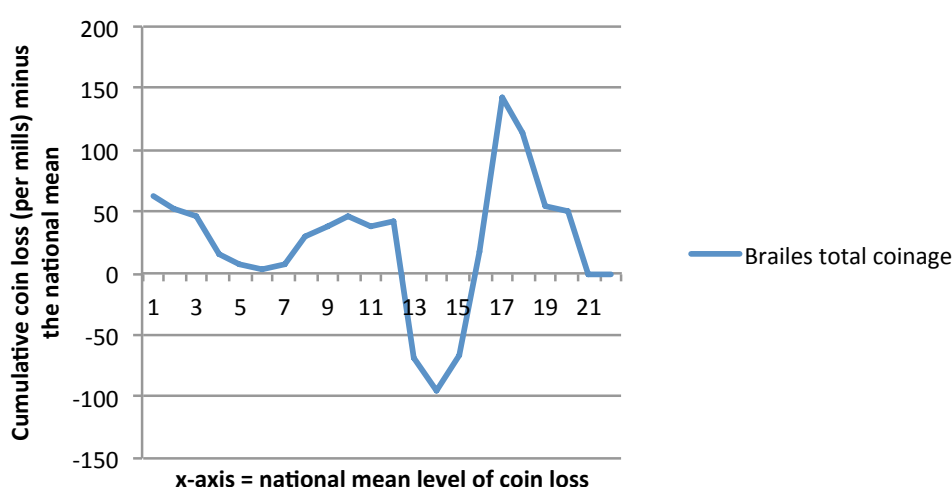


Figure 42 Coin profile for total PAS coinage in Brailles (x-axis = British mean)

Based on the results of the density analysis it is perhaps possible to distinguish five individual clusters (although the north-east cluster could possibly be further sub-divided into four discrete groups). Considering the PAS data from each of the five broad clusters in some detail allows exploration of potential chronological or typological differences between these groups. Selecting which finds belong to each cluster has been approached informally, and it is important to note that there is an element of subjectivity as to which finds have been included in each group.

There are only enough coins from two of the clusters (NW and NE) to allow formal coin analysis (Table 25). Even these are not particularly well represented by coinage, having respectively produced only 21 and 23 coins with closely defined dates. The differences in the coin profiles should therefore be treated with caution (Fig. 41).

The north-east cluster is represented by Iron Age coinage whilst north-west cluster is not. Aside from brief rises in periods 6 and 12, the north-east cluster then sees lower than average levels of coin loss until period 16, when coin loss increases and peaks dramatically in period 17, only to decline from then on (see Table 25 for a key to Reece periods). The north-west cluster has very low levels of coin loss until period 7, rises above the average until period 10, drops from period 11 and rises again from period 15, peaking in period 18. Consequently there are differences in the two

coin profiles, but reliance on such a small sample prevents too much significance being placed on these.

Generally however, the 4th-century AD peaks are typical of Reece's rural coin profiles. A profile for all coins from the parish produces a broadly similar pattern (Fig. 42). As only a small number of the coins from Brailles are well enough preserved to allow close dating, a broader approach to the chronology at each cluster is necessary. By considering the chronological evidence from each of the five clusters more generally and using evidence from brooches, coins and other artefacts where dating evidence is available, it is possible to suggest that the clusters represent contemporaneous activity.

There is some evidence for possible Iron Age activity at four of the clusters: the east and north-east clusters have both produced Iron Age coins, whilst objects with a possible late Iron Age date have been recorded from the north-west and central clusters. Each cluster is represented by coins and/or artefacts up until the end of the 4th century AD.

The north-east cluster occupies the same area as the Bronze Age and Iron Age activity recorded through the combined PAS, fieldwalking and geophysics projects (Portable Antiquities Scheme 2005, 29). It is difficult to determine whether the long timescale for activity in this area represents continuous occupation. Elsewhere, excavated sites that have produced evidence for activity over a long period of time often produce evidence for discontinuity. In

the Middle Thames Valley, for example, there was a recurrent abandonment of late Bronze Age settlements in the Iron Age, some of which were resettled in the late Iron Age or Roman periods (Lambrick 1992, 83).

Between the north-east and north-west clusters a chalybeate spring emerges and feeds into the Tus Brook. This spring has historically been used for medicinal purposes, particularly for the treatment of scrofula (Lewis 1848). It is unclear whether the spring was in existence or known about during the Roman period and earlier, but it is possible that other chalybeate springs were in existence at these times and they may have served as a reason for continued or renewed settlement over a very long period of time.

Bronze Age material is recorded from elsewhere in the parish, but nowhere is it as dense as in the area around the north-east cluster. Given the finder's tendency to collect and report all of his finds, we might reasonably expect more Bronze Age and Iron Age material from some of the other clusters if they saw extensive settlement at this time. The widespread Roman activity in the parish, in areas not so well represented by prehistoric material, is perhaps suggestive of an intensification of settlement in the late Iron Age to Roman periods. The filling up of the landscape at this time is a pattern which is also witnessed to the north in the Arrow Valley (Palmer 1999) and is well known from elsewhere in southern Britain (Fulford 1992).

There are 32 early medieval finds recorded on the PAS database from Brailes. This is quite a large amount considering that there are 186 artefacts of early medieval date recorded on the PAS database for Warwickshire, equating to 17.2 per cent of the total. The earliest of these finds with good dating are coins dating from the late 7th to early 8th century AD, so it is unclear whether this material represents continued activity in the post-Roman period or resettlement after a hiatus. The early medieval finds seem to be more closely associated with the central and south clusters of Roman material in the parish, to the north and south of Lower Brailes village, perhaps reflecting an emphasis on this part of the parish from the early medieval period onwards.

It has been suggested in this case study that five clusters of PAS material perhaps relate to five distinct settlements, with a further settlement known from fieldwalking and excavation recorded on the HER (Hingley 1986; 1987). Aside from identifying the settlements as of 'rural type', it is difficult to characterize them further. The wide distribution of finds at each PAS cluster and at the site known from fieldwalking suggests that some may have been several hectares in extent, although it is difficult to determine where a 'site' ends and 'off-site' activity begins. However, it is useful to consider the groups with reference to types of rural site identified by Hingley (1989) and more recently by Taylor (2007). Taylor, for example, suggested that settlements greater than 2 hectares might include 'hamlets' and 'villages', whilst sites above 8 hectares included small towns and roadside settlements (Taylor 2007, 21). It seems impossible that the wide distribution of material in Brailes relates to one huge nucleated settlement, several hundred hectares in extent, as other settlements of this size are not

paralleled in Roman Britain. It is also very unlikely that the distribution relates to four or five individual 'small towns' situated within such close proximity to one another. Rather, it may be appropriate to see each of the clusters as representing a small group of farmsteads, each perhaps a hamlet or small village, distributed around the lower slopes of Brailes Hill. Based upon the chronological information available from the finds recorded on the PAS database, it seems that these individual sites saw activity from the late Iron Age or early Roman period through to the 4th century AD. One site may have been occupied as early as the late Bronze Age or early Iron Age, and the fairly high numbers of post-Roman, early medieval finds in the parish suggest activity either continued or was renewed at a later point in the post-Roman period.

The meticulously recorded geographical information available for this case study raises an important question about the extent of other sites represented by PAS data. Do the wide distributions of the finds over several hectares represent unusual activity in Brailes not represented in other parishes for which PAS data are available? Or is it simply that when an area is intensively and extensively searched, with finds recorded with precise locational information, the true extent of settlement (and wider patterns of artefact loss and disposal in the landscape) becomes apparent. The latter scenario seems far more likely, and it is possible that some 'sites' interpreted as possible farmsteads during this research may also have had a much wider extent.

Conclusions

The two localized case studies detailed above have both suggested that parts of the Romano-British landscape in the case study region were very densely settled. Forty-three clusters were identified from PAS data in the Alcester study area, 19 of which were previously unrecorded. It seems likely that these represent rural activity, possibly individual farmsteads which grew up in the vicinity of an important local market centre. At Brailes the unusually precise locational information associated with the PAS data allowed discussion of the possible extent of individual settlements, allowing a tentative interpretation of clusters of material as possible hamlets or small villages. In both of these localized case studies the chronological evidence provided by the PAS data suggests that most sites appear to have seen activity from the late Iron Age or early Roman period until at least the 4th century AD. This evidence supports the pattern understood from excavated sites in the region and elsewhere in southern Britain for an intensification of settlement from the late Iron Age onwards.

The two localized case studies incorporated discussion of up to 48 discrete potential sites. These sites form 37.8 per cent of the 127 potential sites recognized across the two counties in total, so a fairly large proportion have been included (albeit superficially). Nonetheless, there are many other potential sites in Worcestershire and Warwickshire that may reward more detailed investigation. The distribution of potential sites across the two counties is not balanced. Eighty-seven of the potential sites are from Warwickshire whilst 40 are from Worcestershire. That the two most promising case studies were both drawn from

Warwickshire reflects this imbalance. This uneven geographical distribution occurs despite the fact that the two counties share a single FLO, based in Worcestershire. The regional distribution of PAS data has already been discussed (see pp. 51–5), where it was possible to show that this imbalance seems largely to be associated with current patterns of land use, and the consequent availability of land on which metal detector users can search. Other factors may include differences in the historical relationship between metal detector users and archaeologists in the two counties. It is also possible that the uneven distribution of PAS data from the two counties represents genuine differences in the Romano-British settlement pattern and/or the use of Romano-British material culture in different areas. For instance, the PAS data from the Alcester area appear to support the pattern suggested by other archaeological sources, that Romano-British settlement often focused on the freely draining river gravel terraces, perhaps suggesting an

agrarian economy where good agricultural land was an important factor in site location. The relatively low quantities of PAS data from Worcestershire, particularly the western part of the county, may reflect lower levels of settlement in these areas, and perhaps also a lower number of market centres. However, it perhaps also reflects the problems associated with using metal detector data to recognize sites in areas where certain artefacts were perhaps less available, or where attitudes towards the acquisition and use of Roman material culture by groups with pastoral economies or distinctive cultural traditions differed. Alongside detailed discussion of individual areas, it is hoped that this chapter has been able to show the contribution PAS data can make to our understanding of Romano-British settlement in landscapes where metal detector use is widespread and where finds are reported in large quantities. It has also shown the limitations of the data for contributing to areas where modern land use restricts widespread searching.

Chapter 6

A Regional Case Study from Northamptonshire

Introduction

The two previous chapters have discussed the extent to which PAS data can contribute to the understanding of Roman settlement in Wiltshire and Worcestershire and Warwickshire. This chapter presents a further regional case study from Northamptonshire in the East Midlands. The chapter follows the same format as the case studies presented in Chapters 4 and 5, and the reader is directed towards the introduction to Chapter 4 for an overview of the structure of the discussion. Presented below are two localized case studies from the county, focusing on the data available from the vicinity of two nucleated sites in Northamptonshire, Titchmarsh and Norton/Whilton Lodge (*Bannaventa*).

Romano-British settlement in Northamptonshire

Northamptonshire is situated within the boundaries of three Iron Age tribes: the *Dobunni* to the west; the *Catuvellauni* to the south and east; and the *Corieltauvi* to the north (Tingle 2004, 1). The county has seen fairly extensive archaeological investigation, initially with the efforts of early antiquarians (Tingle 2004, 4–6), and subsequently ahead of increased development and mineral extraction since the mid 20th century (Tingle 2004, 8). The county also has a strong tradition of amateur archaeology and important excavations and field surveys have been undertaken by amateur societies. Extensive programmes of aerial photography have been undertaken since the 1940s (Foard 2007, 6–7), most recently as part of an English Heritage programme of aerial reconnaissance (Deegan and Foard 2007).

Northamptonshire is thus very well represented by evidence from crop and soil marks, although standing earthworks are generally uncommon, a result of widespread destructive arable farming in the region (Taylor 2007, 45). The amount of archaeological investigation undertaken in Northamptonshire makes the county one of the best investigated in Britain, and the number of records on the HER for the county is considerably greater than for the other case study regions (see Chapter 3, pp. 28–9). The following section summarizes some aspects of the Romano-British settlement pattern in the county (see **Fig. 43** for a map of sites discussed in the text) in order to place the subsequent analysis of PAS data in context.

Northamptonshire contained no *coloniae*, *municipia* or *civitates*, although a number of smaller nucleated settlements are known. These settlements are generally divided into two groups: large, defended settlements and slightly smaller settlements without defences. A further group of nucleated sites are also considered possible candidates for local or regional centres in the Roman period, although some of these are perhaps better interpreted as villages rather than towns (Taylor and Flitcroft 2004, 69). Two of the walled towns in the county, Norton/Whilton Lodge (*Bannaventa*) and Towcester (*Lactodorum*), were situated along the line of Watling Street Roman road, whilst Irchester was located at a strategic position at the crossing of the Nene Valley where it is joined by the River Ise. In common with the defended settlements, the non-defended ‘small towns’ in Northamptonshire tend to be associated with the Roman communications network in the county, often at the junction of roads or the union of rivers, and examples

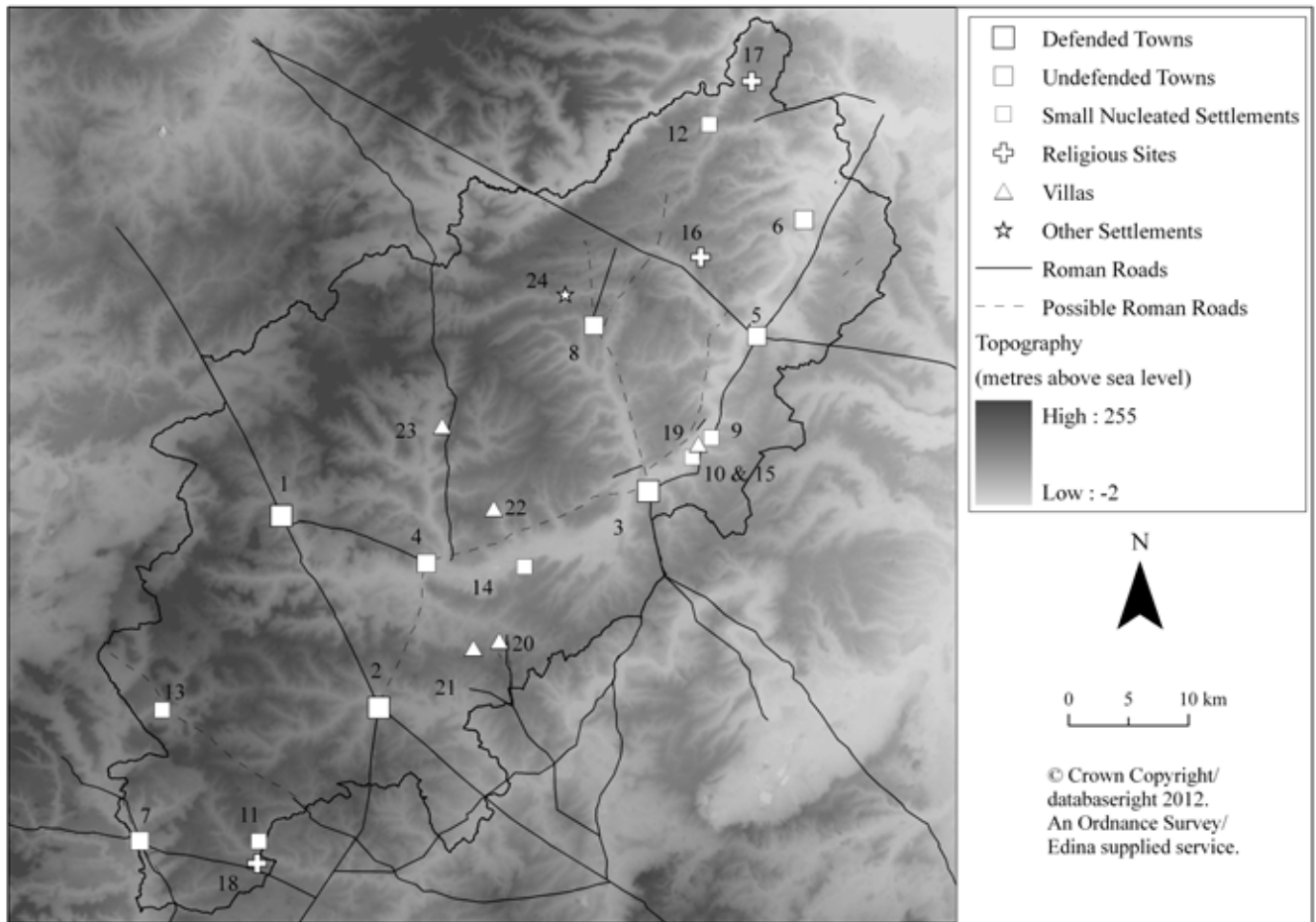


Figure 43 Distribution of major Romano-British sites in Northamptonshire with sites discussed in the text numbered. Sites mentioned in the text – defended towns: 1 Norton (*Bannaventa*); 2 Towcester (*Lactodorum*); 3 Irchester; undefended towns: 4 Duston; 5 Titchmarsh; 6 Ashton; 7 King's Sutton; 8 Kettering; small nucleated settlements: 9 Stanwick; 10 Higham Ferrers; 11 Brackley; 12 Laxton; 13 Chipping Warden; 14 Little Houghton; religious sites: 15 Higham Ferrers; 16 Brigstock; 17 Collyweston; 18 Evenly; villas: 19 Stanwick; 20 Piddington; 21 Quinton; 22 Thorplands; 23 Brixworth; other settlements: 24 Rushton

include Duston, Titchmarsh, Ashton, King's Sutton and Kettering (Taylor and Flitcroft 2004, 68). Sites with possible urban characteristics but which may really be rural nucleated settlements include sites at Stanwick, Higham Ferrers, Brackley, Laxton, Chipping Warden and Little Houghton (Taylor *et al.* 2002, 8–9; Taylor and Flitcroft 2004, 69).

A number of nucleated settlements have suspected religious associations and temples are suspected with reasonable confidence at *Lactodorum*, Irchester and Titchmarsh, and there have been suggestions that Irchester and Titchmarsh may have acted as local religious centres (Curteis *et al.* 2000, 174–5; Taylor 2000, 6). A shrine was associated with the nucleated site at Higham Ferrers, and metal objects including pins, needles and curse tablets were recovered from a circular area suggestive of an additional shrine at the site (Lawrence and Smith 2009; Hardy 2003, 56). Aside from the urban sites with religious associations, a small number of other religious sites are known and rural temples have been excavated at Brigstock and Collyweston (Taylor and Flitcroft 2004, 76). Evidence for specific religious traditions is limited, although evidence for early Christianity is suggested by two lead tanks bearing the *chi-rho* motif, recovered respectively from Ashton and Rushton. These, and the hoard of early Christian church plate from *Durobrivae* over the border near Peterborough have been seen

as possible evidence for significant Christian communities in the late Roman period (Taylor and Flitcroft 2004, 77).

As elsewhere in Britain, investigations into rural Roman settlement in Northamptonshire have been dominated by high status villas (Taylor and Flitcroft 2004). Most of Northamptonshire's villas appear to have been constructed on sites occupied during the Iron Age and notable work has been undertaken at Piddington, where ongoing investigations since the late 1970s by the Upper Nene Archaeological Society have resulted in a detailed understanding of the villa's chronological development (Friendship-Taylor and Friendship-Taylor 1992; 2003). Important extensive excavations at Stanwick have provided information on the relationship between the main villa building and other structures over an area of approximately 10 hectares (Neal 1989; Taylor and Flitcroft 2004, 67), representing the first instance of a villa being fully excavated along with its subsidiary buildings, which included barns, an associated village and what has been interpreted as a bailiff's residence (Neal 1989; Taylor and Flitcroft 2004, 67).

Whilst villas have historically been the type of rural site to have seen most excavation, recent years have seen significantly more work on lower status rural settlements, usually ahead of development and mineral extraction (Taylor 2007, 47), and the wider pattern of rural settlement in the county is now becoming clearer. Whilst complex, the

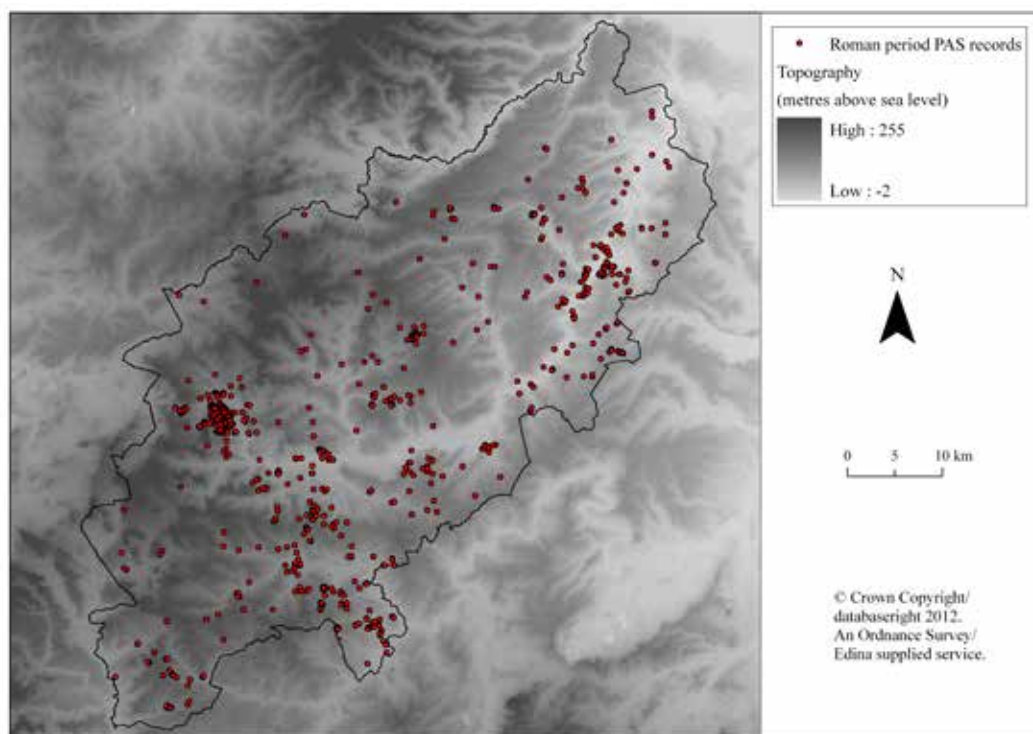


Figure 44 Distribution of Roman PAS data in Northamptonshire

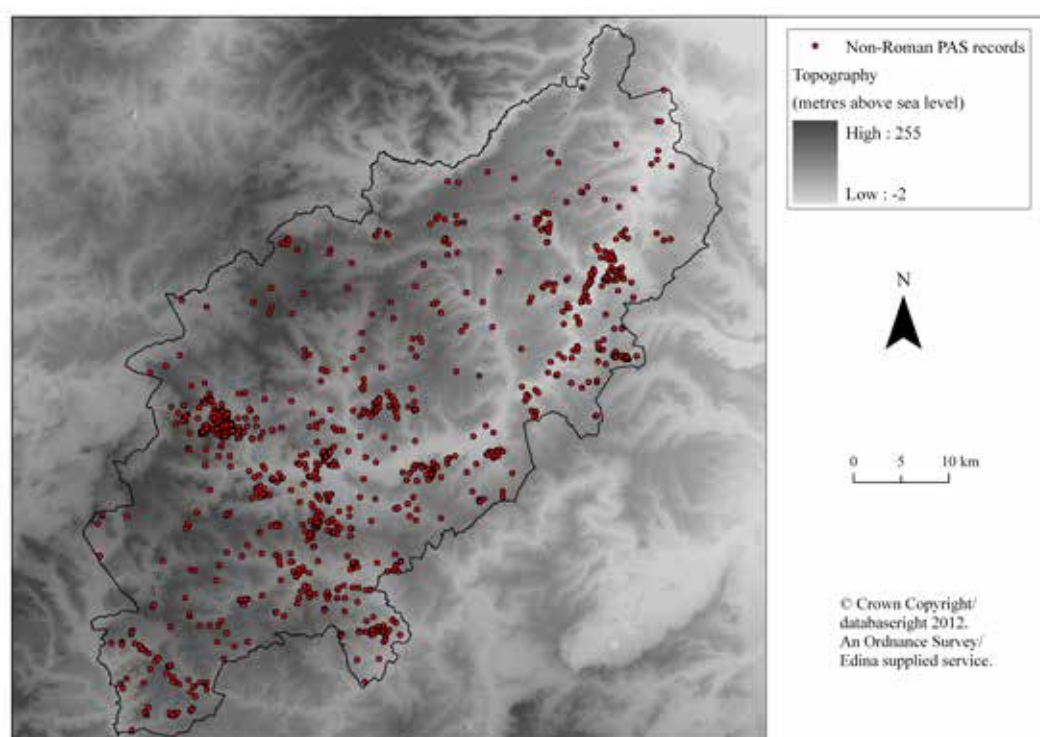


Figure 45 Distribution of non-Roman PAS data in Northamptonshire

general pattern is for small, enclosed settlements to be transformed or abandoned during the late Iron Age to Roman transition period, and some were restructured to form groups of enclosures (Taylor and Flitcroft 2004, 64), part of a gradual reorganization of rural settlement during the 1st to 2nd centuries AD (Taylor 2001a, 4). Taylor has noted clear distinctions in traditions of domestic settlement architecture in the county. In central southern Northamptonshire round houses are a common form, and continue with a gradual transformation from timber into stone whilst row-type villas also begin to be established from the late 1st century AD (Taylor 2001a, 3) at places such

as Piddington, Quinton, Thorplands and Brixworth (Taylor and Flitcroft 2004, 65). However, in the north east of the county, after an initial continuation of round houses they appear to cease altogether and were replaced by aisled buildings and in some cases villas (Taylor and Flitcroft 2004, 25).

The distribution of PAS data in Northamptonshire

The PAS dataset for Northamptonshire was downloaded from the PAS database on 12 September 2008, when it included 4,338 records dating to the Roman period. This includes 176 records of late Iron Age date and 11 of early

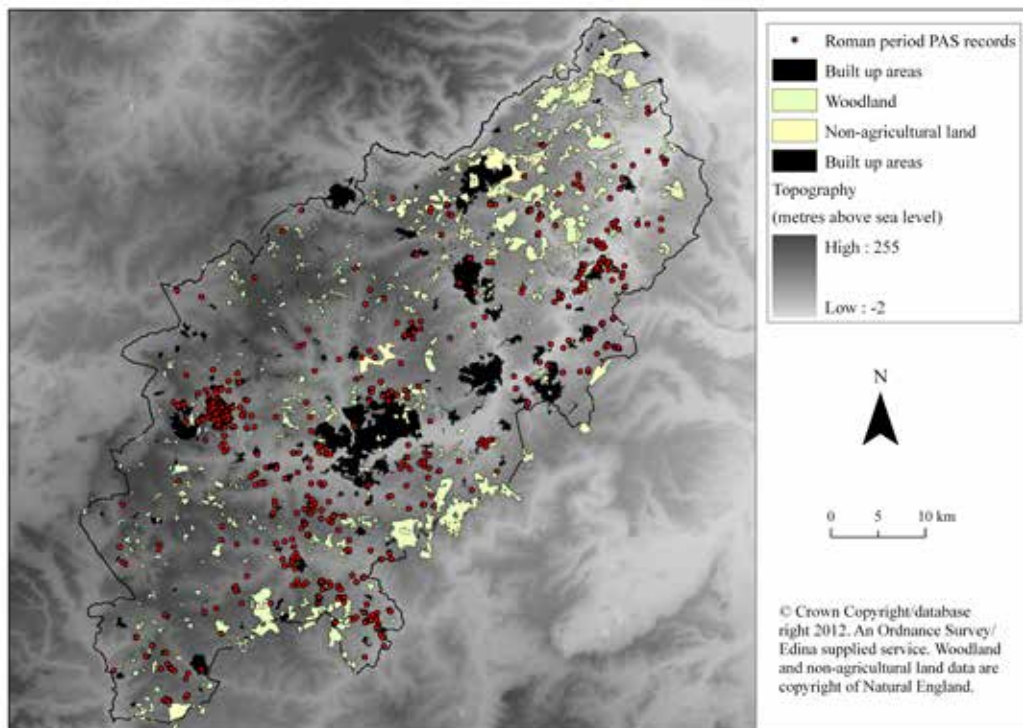


Figure 46 Distribution of Roman PAS data in Northamptonshire against major recovery constraints

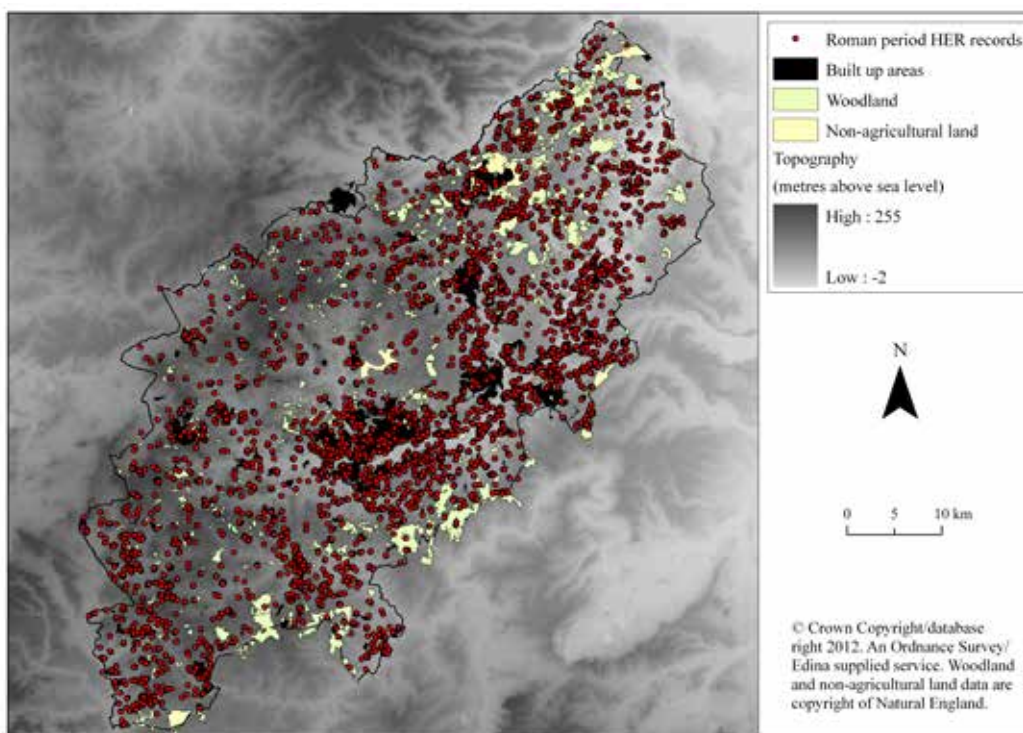


Figure 47 Distribution of Roman HER records in Northamptonshire

medieval date which possibly date from as early as the 5th century AD.

Figures 44–5 plot the distribution of Roman and non-Roman PAS data. The two share similar distributions and the data in both are best represented in the west, centre and south of the county. The apparent similarities between the Roman period data to those of other periods may partly reflect the historic settlement pattern, but it is also possible that the distribution is biased towards areas closer to Northampton where the FLO is based. It is notable that the north and far east of the county are fairly poorly represented by PAS data, and finders of archaeological material from

these areas perhaps find it more difficult to report their discoveries than those with easier access to Northampton. However, the distribution is perhaps more likely to be affected by contemporary land use and the effect this has on the availability of land on which to search (**Fig. 46**). This is most notable in the north east of the county, where the densely wooded Rockingham Forest covers a large area and only limited data are available from built-up areas.

HER data in Northamptonshire are considerably more widespread and significant quantities are available from built-up areas, largely associated with archaeological work undertaken ahead of development (**Fig. 47**). The

Natural Area	Density of PAS finds per km ²
Yardley Whittlewood Ridge	3.97
West Anglian Plain	2
Midland Clay Pastures	1.72
Cotswolds	1.09
Rockingham Forest	0.81

Table 26 Density of PAS data in Northamptonshire's distinctive Natural Areas

availability of HER data from much of rural Northamptonshire largely reflects extensive aerial photography undertaken in the county (Deegan and Foard 2007). Although more widespread, the HER data are also unevenly distributed, and once again the south and east of the county dominate. Possible factors behind the distribution of the PAS and HER datasets can be explored by considering the two resources quantitatively. This has been done by dividing the datasets into distinct geographical groups according to the different areas defined by Natural England (Natural England 2009b) (**Tables 26–7**).

In all areas HER data are significantly better represented than PAS data, but there are broad similarities between the

Natural Area	Density of HER records per km ²
West Anglian Plain	10.71
Yardley Whittlewood Ridge	7.61
Rockingham Forest	6.72
Cotswolds	5.62
Midland Clay Pastures	3.48

Table 27 Density of HER data in Northamptonshire's distinctive Natural Areas

distributions. For example, the Yardley Whittlewood Ridge and the West Anglian Plain dominate both data sets. The permeable geology in these areas has resulted in good evidence from aerial photography, and development-led investigation in the urban areas has also provided a lot of information. A mixed farming pattern and low levels of woodland, particularly in the West Anglian Plain, may provide more areas on which detector users can search than in other areas.

The Midland Clay Pastures in the north and west of the county are characterized by more impermeable geology than the south and east, reducing the potential for crop mark formation (Deegan 2007, 24). Much of the north and west of the county has also been under permanent pasture (Deegan 2007, 36), thus restricting the aerial photographic evidence available from crop and soil marks. This is also likely to restrict the amount of land available to metal detector users. Whilst the Midland Clay Pastures are the area third best represented by PAS data, a kernel density plot shows how they cluster around the modern town of Daventry and this is likely to reflect intensive activity by detectorists attracted by the nearby Roman small town of *Bannaventa* (discussed below).

Figure 48 presents a kernel density plot for PAS and HER data in Northamptonshire. The plot shows seven distinct clusters of PAS data and one of HER data. This shows that there are quite closely defined areas from where a lot of PAS data have been recovered, but that HER data tend to be more widely distributed. A second plot using wider search parameters (a search radius of 10,000km² as opposed to 2,000km²) reveals the bias towards the south and east in the HER data, even though they do not tend to

Figure 48 Kernel density plots for PAS and HER data in Northamptonshire with a 2,000km² search radius

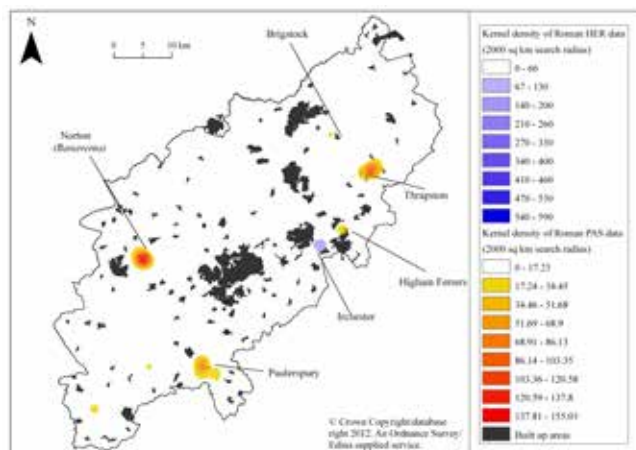


Figure 49 Kernel density plot for HER data in Northamptonshire with a 10,000km² search radius

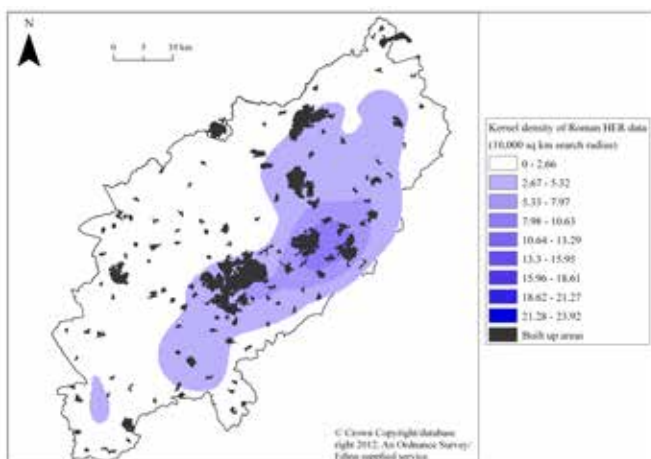
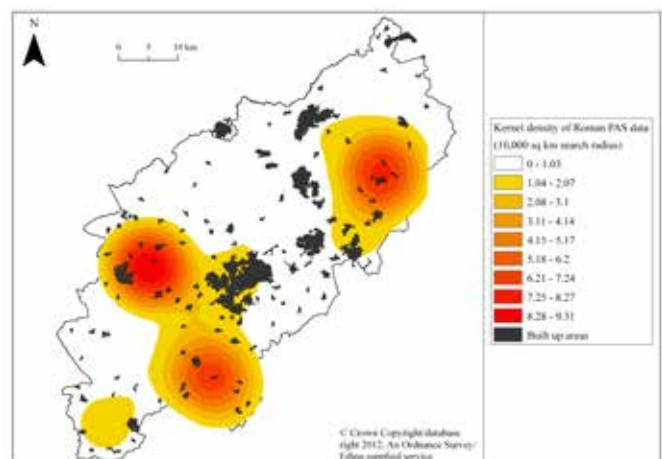


Figure 50 Kernel density plot for PAS data in Northamptonshire with a 10,000km² search radius



cluster around individual sites or towns (**Fig. 49**). A plot using these parameters for PAS data still identifies discrete clusters within the distribution (**Fig. 50**).

Figure 48 shows how five of the seven (71.4 per cent) PAS clusters occur in close proximity to modern towns or villages at Norton, Brigstock, Thrapston, Higham Ferrers and Paulerspury. At each of these towns a major Roman site is located nearby. The small town of *Bannaventa* is next to Norton; Brigstock and Higham Ferrers are nucleated settlements with potential temples; Thrapston is adjacent to the ‘small town’ at Titchmarsh; and a possible Romano-British cemetery is known from Paulerspury. This may suggest that these well-known sites attract metal detector users.

For instance, the finds from the cluster around the village of Norton were recovered by 15 individuals. Of these, nine were not from the immediate area. However, these individuals accounted for only 9.7 per cent of the finds recovered; 85 of a total of 875. The remaining 90.3 per cent were recovered by six finders from Norton or neighbouring parishes. One of these finders accounted for 55 per cent of the finds. This shows how the well-known Roman site of *Bannaventa* attracts people from a fairly wide area, but that it is finders who live in the immediate area who produce most of the finds.

A similar pattern occurs in the Thrapston/Titchmarsh area, the site of another ‘small town’. Here 619 finds were recovered by eight individuals and again, the majority of the finds were recovered by locals. At this location, a small local metal detecting club of three members were responsible for 608 (98.2 per cent) of the finds. Individually, the club members accounted for 328 (53 per cent), 212 (34.3 per cent) and 68 (11 per cent) of the finds respectively. The remaining five visitors to the area accounted for just 11 artefacts (1.8 per cent).

Categorization of PAS findspots in Northamptonshire

The above discussion has shown how large collections of material have been recovered from a small number of findspots in Northamptonshire and that these tend to be recovered from areas around known Romano-British sites. However, there are large numbers of additional findspots represented by PAS data where the groups of finds are smaller, but which nonetheless may represent important evidence for Romano-British activity. It has been possible to recognize a total of 391 individual findspots for Roman PAS data in Northamptonshire (**Table 28**). Ninety-four of these are potential sites, of which exactly half are previously unrecorded on the HER (see Chapter 3 for a detailed discussion of the method for identification of sites).

As it is difficult to establish the total number of sites represented by record on the HER, data on Roman sites provided by the National Monuments Record (NMR) are used here to consider the impact that PAS data have on our understanding of the number of sites in Northamptonshire. The NMR data contains 647 individual Roman sites from Northamptonshire, ranging from small rural settlements to towns. The 47 new PAS sites therefore represent a potential increase of 7.3 per cent, along with enhanced information for a further 7.3 per cent.

Findspot type	Located at least 200m away from nearest HER record	Within 200m of HER record	Total
Single metal objects	132	28	160
Small assemblages	66	43	109
Medium assemblages	21	10	31
Large assemblages	26	37	63
Non-metal	21	7	28
Total	266	125	391

Table 28 Table showing ‘new’ and previously known findspots according to findspot category (discussed in Chapter 3)

The composition of medium and large groups of PAS data in Northamptonshire

Tables 29–30 summarize the composition of large and medium groups of metalwork from Northamptonshire. Coins clearly dominate the groups of finds, and are absent from only four findspots. The next most common artefact type are dress accessories and these were recovered at 58 (61.7 per cent) of the 94 medium and large findspots. The broad category ‘other’ includes all miscellaneous artefacts other than coinage, dress accessories or ceramics, such as objects associated with the household, religion and transport. Fifty (53.2 per cent) of the findspots were represented by such artefacts. Ceramics were reported from just 18 medium and large groups (19.2 per cent).

A small number of findspots have been selected for detailed analysis in the final section of this chapter, focusing on the material recovered from the area surrounding the Romano-British ‘small towns’ at Titchmarsh/Thrapston and *Bannaventa*, near Norton. Whilst these have been selected for detailed discussion, a number of potential ‘sites’ represented by PAS data in Northamptonshire might merit further attention in the future. At Blisworth, for example, a group of 11 artefacts (ten coins and a single brooch) occur within the vicinity of cropmarks recorded on the HER which have been mapped digitally by the Northamptonshire Mapping Programme (**Fig. 51**). The cropmarks have been interpreted as enclosures, pits and unidentified features. Although finds of prehistoric and medieval date are recorded on the PAS database from further north in the parish, several hundred metres north of the cropmarks, the only post-Roman finds in the area are two post-medieval coins. This provides a strong indication that the cropmarks represent Romano-British activity. The earliest of the finds is a 1st-century AD Colchester brooch (NARC-1FDE42), which ranges in date from c. AD 25–75. A late 2nd-century AD coin of Lucius Verus (NARC-E5E906) was also recovered from the findspot, whilst the remainder of the coinage is late 3rd and 4th century AD.

Other finds from nearby include a 1st-century AD coin of Vitellius (NARC-87C371) and a 1st- to 2nd-century AD plate brooch (RAH1450). The finds in the area suggest that activity occurred throughout the Roman period and it is

Findspot	C	D	Cer	O	Total	Findspot	C	D	Cer	O	Total
Barnwell 3	11	1	0	0	12	Potterspury 2	48	1	0	3	52
Blisworth 3	10	1	0	0	11	Norton 9	40	1	15	5	61
Boughton 1	14	3	0	0	17	Norton 14	25	8	5	4	42
Brigstock 2	16	0	0	0	16	Norton 15	658	15	32	13	718
Brigstock 5	68	5	0	1	74	Norton 17	0	13	0	0	13
Croughton 2	10	2	0	0	12	Norton 18	33	0	0	1	34
Daventry 3	17	1	0	2	20	Oundle 1	317	0	0	0	317
Deanshanger	31	5	0	3	39	Pilton 2	150	0	0	0	150
Deene 1	13	0	0	0	13	Pilton 3	9	1	0	3	13
Farthinghoe 1	122	4	0	1	127	Ringstead	13	3	0	1	17
Gayton 7	13	2	0	0	15	Stanwick 2	12	0	0	0	12
Hackleton 3	8	3	0	1	12	Stowe 9 Churches 3	56	0	0	0	56
Hargrave 2	6	3	0	4	13	Thrapston 1	365	24	0	12	401
Harlestone 1	22	0	0	0	22	Thrapston 2	17	0	0	0	17
Harpole 1	37	0	0	1	38	Tiffield 1	14	0	0	0	14
Higham Ferrers 1	13	78	0	22	113	Tiffield 2	3	8	5	1	17
Hinton in the Hedges 3	37	6	1	4	48	Titchmarsh 2	123	15	2	0	140
Hollowell 1	10	1	0	0	11	Titchmarsh 5	9	1	0	3	13
Islip 1	82	2	3	4	91	Titchmarsh 7	28	2	0	0	30
Islip 4	40	1	0	4	45	Towcester 1	54	0	0	0	54
Kislingbury 2	16	8	0	5	29	Towcester 13	0	11	0	0	11
Lamport 2	28	0	245	0	273	Towcester 14	13	3	0	0	16
Little Houghton 1	43	3	0	0	46	Towcester 8	40	11	0	7	58
Lowick 2	10	0	0	3	13	Upton 1	39	0	3	1	43
Moulton 4	48	1	84	2	135	Walgrave 3	15	5	0	1	21
Newton and Little Oakley 1	19	0	0	0	19	Wappenham1	79	0	0	1	80
Norton 4	15	0	0	2	17	Whittlebury 3	62	6	1	2	71
Norton 7	17	0	2	9	28	Whittlebury 4	42	3	0	1	46
Norton 1	11	1	0	1	13	Wilbarston 2	7	3	0	3	13
Paulerspury 1	116	25	0	10	151	Woodford 1	7	3	2	1	13
Paulerspury 3	226	23	33	21	303	Woodford 7	29	1	0	1	31
Potterspury 1	18	0	0	0	18						

Table 29 Summary of assemblage composition of large PAS findspots in Northamptonshire (11 metal artefacts or more). C = coins, D = dress accessories, Cer = ceramics, O = other

possible that the cropmarks represent various phases of activity throughout the period.

Further examples of PAS assemblages associated with cropmarks occur in Grendon and Islip. Whilst finds of surface material cannot unequivocally be shown to relate to crop or soilmarks, they do provide a means of determining a likely date for the features. Where available therefore, metal detector finds may be used in a similar manner to fieldwalking surveys for determining the likely date of cropmarks, as undertaken, for example, in the Fenland survey (Coles and Hall 1996).

The assemblage from Higham Ferrers 1 stands out as having a particularly high number of dress accessories, including unusually high quantities of pins and brooches,

though the large numbers of these artefacts may partly reflect the process through which finds from the site were reported. The author was responsible for recording many of these artefacts and one individual tended to report his finds in batches divided by object type. This helps explain the relatively low quantities of coinage in the group as these finds were not prioritized for reporting by the finder. The group of finds from Higham Ferrers is therefore subject to considerable bias. However, the large quantity of pins and brooches reported is unusual and is strongly suggestive of ritual deposition (Sally Worrell pers. comm.). The PAS data from this findspot were recovered from an area near a Romano-British shrine discovered during excavation ahead of development (Lawrence and Smith 2009), and

Findspot	C	D	Cer	O	Total	Findspot	C	D	Cer	O	Total
Alderton	2	0	0	4	6	Potterspury 3	5	0	0	0	5
Barnwell 1	6	0	0	0	6	Rothersthorpe 3	3	0	0	2	5
Barnwell 2	0	3	0	2	5	Rushden 1	6	0	0	0	6
Boughton 2	0	4	0	1	5	Silverstone	6	2	0	2	10
Cold Higham	6	1	0	2	9	Stanwick 3	0	6	0	2	8
Croughton 1	5	0	0	0	5	Stowe 9 Churces 2	1	1	2	4	8
Gayton 1	4	4	0	2	10	Sudborough	5	0	0	0	5
Gayton 5	4	3	0	1	8	Tiffield 3	6	0	0	1	7
Grafton Regis 3	4	3	0	1	8	Titchmarsh 9	3	1	0	1	5
Hartwell 2	5	1	0	0	6	Upton 2	5	0	1	1	7
Irthlingborough 1	1	3	17	3	24	Upton 5	5	0	0	1	6
Kettering 2	10	0	0	0	10	Wadenhoe	10	0	0	0	10
Long Buckby 1	5	0	0	1	6	Woodford 4	1	2	0	2	5
Nether Heyford 2	8	1	0	1	10	Woodford 5	5	0	0	0	5
Norton 5	3	0	1	3	7	Woodford 9	9	0	0	0	9
Potterspury 10	2	1	0	2	5						

Table 30 Summary of assemblage composition of medium PAS findspots in Northamptonshire (5–10 metal artefacts). Note the category ‘other’ includes non-metal artefacts, which takes the total number of finds above 10 in some cases. C = coins, D = dress accessories, Cer = ceramics, O = other

there is a strong possibility that the finds are associated with this site.

Localized case study: the Titchmarsh/Thrapston area

A late Iron Age and Roman settlement has been known from Titchmarsh since the 18th century (Curteis *et al.* 2000, 164), where a nucleated settlement centres on a road junction near a bridging point of the River Nene. The site is best known through aerial photography, yet it has seen some limited excavation (Boyce 1986; Cadman 1988; Curteis *et al.* 2000, 165–8), whilst an overview of Iron Age and Roman finds recovered from the site through excavation and metal detecting was published some years ago (Curteis *et al.* 2000). The extent of the settlement is poorly understood, and it has been suggested that the town may not have had a formal boundary, with unplanned settlement perhaps extending along some of the roads and tracks which converge in the area (Curteis *et al.* 2000, 164). Previous work undertaken on the small finds from the settlement has suggested that the site was occupied from the late Iron Age to late Roman periods, and possibly into the 5th century AD. A religious focus has been postulated, based on interpretations of cropmarks as possible shrines (Taylor 2002a, 6) and on the ‘unusual nature of a number of the finds’ from the site (Curteis *et al.* 2000, 175).

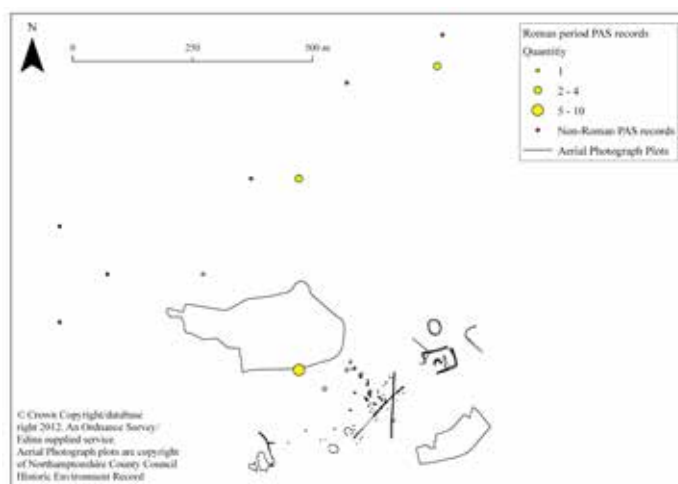
The group of PAS findspots from the Thrapston/Titchmarsh area have been selected for detailed study because they are distributed across and around the area of the nucleated settlement and present a rare opportunity to study metal detector finds from a known Romano-British ‘small town’. Although detector finds from the site have previously been studied by Curteis (Curteis *et al.* 2000), a number of years have now passed since this work was

undertaken and the PAS has had the opportunity to record additional material, allowing reassessment of the earlier work.

Surprisingly, and in contrast to the nucleated site at *Bannaventa*, no part of the settlement at Titchmarsh is protected as a scheduled monument. Owing to the fact that most Roman small towns are either scheduled or buried beneath modern settlements, significant quantities of metal detector finds from the core area of such sites are rare. The 619 finds from Titchmarsh recorded on the PAS database were almost all reported by members of one small club, who were responsible for 608 (98.2 per cent) of the finds and reported them with six figure grid references.

The finds from the nucleated site and a number of findspots in the surrounding area present a useful

Figure 51 PAS data plotted against Northamptonshire Mapping Programme plots of cropmarks in Blisworth



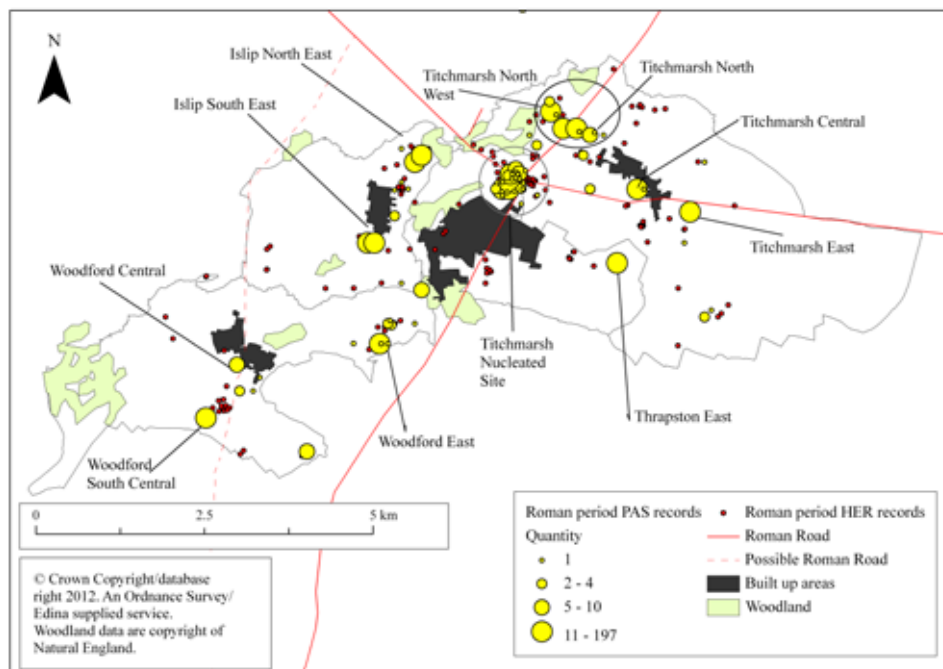


Figure 52 Distribution of late Iron Age and Roman PAS data in and around Titchmarsh, with major PAS findspots discussed in the text labelled

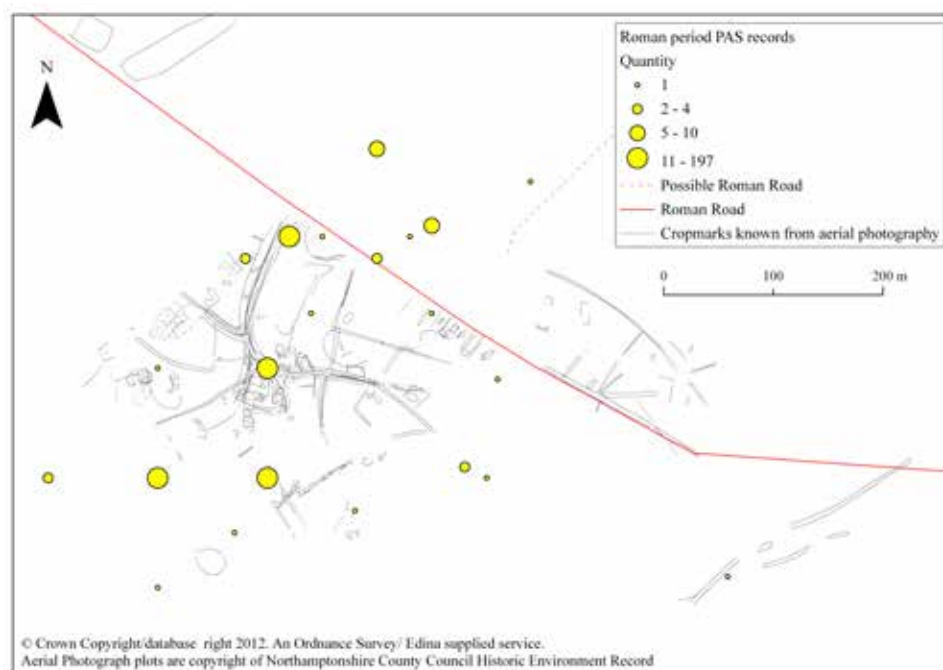


Figure 53 Distribution of PAS Roman and Late Iron Age data in relation to Titchmarsh nucleated settlement

opportunity to compare finds from a known ‘small town’ with those from sites in its presumed hinterland (**Fig. 52**).

There are 11 large groups of PAS metalwork in Titchmarsh and its adjacent parishes, and a further four with between five and ten artefacts, making a total of 15 potential ‘sites’. Before considering the findspots in the area surrounding the nucleated settlement, it is worth discussing the finds associated with the ‘small town’ itself.

The Romano-British nucleated settlement lies predominantly within the parish of Thrapston and the majority of the finds therefore occur in Thrapston. Using the methodology presented in Chapter 3, it is possible to recognize one large assemblage of Roman finds distributed across the extent of the town known from cropmarks (**Fig. 53**).

As well as the Roman material, the PAS data includes 30 Iron Age coins, effectively doubling the 27 Iron Age coins previously recorded from the site by Curteis (*Curteis et al.*

2000, 168–9). However, although some of the coins are recorded on the PAS database as having been found shortly before or after the publication of the above report, there remains a possibility that at least some of the coins on the PAS database are duplicates of those reported to Curteis. This is suggested by the occurrence of similar numbers of the same type of coins from the two sources, and erring on the side of caution, they are considered here to be duplicate records. If this is the case, there are an additional three records of Iron Age coins, taking the total to 30.

The previous work on finds from Titchmarsh detailed 518 coins from the area reported by metal detector users, in addition to a number of finds recovered during excavation (*Curteis et al.* 2000, 170). Fourteen brooches were also recovered, as well as 43 miscellaneous small finds, discovered over a period of around a decade. Whilst a small number of the Roman coins and small finds on the PAS

database were recorded prior to publication of Curteis' report, and may therefore also be duplicate records, the majority have been discovered after its publication and are therefore additional to those already recorded by Curteis. Comparison of the brooch types with those in the earlier report certainly indicates that most have not previously been recorded.

Whilst many PAS finds from the nucleated settlement at Titchmarsh are additional to those recorded by Curteis, they should be considered as part of the same assemblage, allowing reassessment of some of Curteis *et al.*'s findings. The brooch assemblages from the site (including metal detector finds and those recovered during excavation) were considered unusual because they contained only a limited number of types: six Colchester brooches; four Colchester derivatives; six Hod Hill brooches; and five plate brooches (Curteis *et al.* 2000, 173). The PAS brooch assemblage includes four Colchester brooches; a Langton Down brooch; a Hod Hill brooch; a trumpet brooch; two fibulas of uncertain type; a t-shaped brooch; a swimming duck brooch; and five plate brooches. Whilst not dramatically altering the broad pattern of brooch types, the PAS finds indicate that a wider variety was in use at the site than those listed by Curteis.

Curteis, Jackson and Markham concluded from the presence of some unusual finds at Titchmarsh that the site may have had a significant religious function as well as having an important local administrative role. An unusually large number of lead weights were considered as possible evidence for activity associated with Mercury, who oversaw trading, and the authors suggested that temples and market places may have been closely associated (Curteis *et al.* 2000, 174). An additional number of three lead weights are recorded on the PAS database: however, the presence of lead weights at a market town should not be considered surprising and are not sufficient evidence to argue for religious activity. However, some of the plate brooches were also interpreted as having potential religious associations: a lugged disc brooch was seen as a possible sun symbol, perhaps associated with Jupiter in a warrior role, or connected to fertility and healing, whilst a boar brooch was suggested as having possible Romano-British associations with war (Curteis *et al.* 2000, 173). The authors postulated that the presence of these brooches may have fulfilled a votive function (Curteis *et al.* 2000, 173), and evidence exists from elsewhere to suggest that individual brooch types were associated with ritual activity: horse and rider brooches, for example, have often been recovered from ritual deposits (Ferris 1986, 175; Robinson 2001, 160; Bayley and Butcher 2004, 175; Eckardt 2005), and Crummy (2007) has recently discussed the potential religious significance of other types of plate brooch.

At least one shrine or temple is suggested by the aerial photographic record (Curteis *et al.* 2000, 175), and as many as three are possible (Taylor 2002a, 10). Of potential significance in this regard is the presence of a miniature axe recorded on the PAS database (NARC-C7EBA3), not previously recorded by Curteis. Such axes are common finds from religious contexts and are usually regarded as votive deposits (Green 1985, 241). The grid reference given for the

axe does not correspond directly with the area of any of the suspected shrines, although this may be a result of movement through fairly intensive modern cultivation (Taylor 2002a, 18) or the provision of imprecise locational information and should not necessarily be taken as evidence for an additional temple or shrine. Yet, the presence of an artefact with a very likely religious association, along with the brooches, provides support for the interpretation of Titchmarsh as a religious centre.

A second miniature axe (NARC-9BC511) is recorded from another findspot in the parish, Titchmarsh Central, approximately 1,800m to the east of the nucleated settlement. This findspot includes 13 metal artefacts, and is not directly associated with any records on the HER, although an undated enclosure known through aerial photography is located approximately 300m to the south west. The assemblage is represented by an interesting group of artefacts: alongside the miniature axe is a gold Iron Age stater (NARC-9BA182); a late Iron Age scabbard mount (NARC-9BA9D1); and a figurative mount of Cupid (NARC-9BBD94) (possibly a vessel escutcheon). The rest of the assemblage comprises predominantly late Roman coinage and a trumpet brooch (NARC-DEFC27). Although the assemblage is not exceptionally large, the presence of late Iron Age, early and late Roman material is interesting, particularly given the presence of the votive axe. Representations of Cupid have also been recovered from suspected shrines (Bagnall Smith 1999, 21, 29), and it is feasible that the Cupid mount also has religious associations. It is therefore possible that this findspot represents the site of another shrine, some distance from the nucleated settlement, though isolated religious objects need not necessarily imply significant ritual activity and the objects may also be associated with a domestic settlement. The miniature votive axe may suggest a religious link with Titchmarsh, perhaps reflecting local worship of a deity, or by a particular cult, although no known relationship exists between votive axes and any individual deity or cult (Green 1985, 241).

As with most PAS findspots, the groups of finds from the various locations in Titchmarsh and adjacent parishes are generally dominated by coinage. Analysis of the coins therefore provides a useful way of comparing the different findspots. Following Reece (1991), the coins from each findspot have initially been divided into four Roman periods (A: pre-AD 260; B: 260–96; C: 296–330; D: 300–402), with Iron Age coins listed as an additional group. These are displayed as percentages, allowing initial comparison of coin loss at the different findspots during these four broad periods (**Table 31** and **Fig. 54**).

Where the level of preservation permits, coins have then been divided into the 21 periods devised by Reece for analysis (I am grateful to Philippa Walton for providing me with her refined coin lists of the PAS data for Northamptonshire). For comparative purposes these have then been expressed as *per mils* (per thousand), enabling statistical comparison between the different sites.

Not all of the sites from the Titchmarsh area produced the 20 coins needed for meaningful analysis (Moorhead pers. comm., and see Chapter 3, pp. 26–7), and Woodford Central, Woodford West, Titchmarsh Central and

Findspot	Group A (AD 43–260)		Group B (260–96)		Group C (296–330)		Group D (330–402)		Iron Age coins		Undefined group		Number of coins with Reece ids		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Titchmarsh North	5	12.2	11	26.83	4	9.76	11	26.83	5	12.2	5	12.2	23	56.1	41	100
Titchmarsh North West	31	37.8	12	14.63	13	15.86	26	31.7	0	0	0	0	80	97.56	82	100
Titchmarsh Nucleated Settlement	10	2.65	35	9.28	8	2.12	185	49.07	30	7.96	109	28.91	197	52.25	377	100
Islip North	1	1.19	19	22.62	2	2.38	41	48.81	0	0	21	25	51	60.71	84	100
Islip South	2	5	4	10	2	5	19	47.5	1	2.5	12	30	25	62.5	40	100
Thrapston East	4	23.53	2	11.76	0	0	2	11.76	0	0	9	52.94	4	23.53	17	100
Titchmarsh Central	1	11.11	0	0	3	33.33	3	33.33	1	11.11	1	11.11	7	77.78	9	100
Woodford Central	0	0	0	0	0	0	0	0	0	0	8	100	0	0	8	100
Titchmarsh East 1		3.57	7	25	1	3.57	13	46.43	0	0	6	21.43	20	71.43	28	100
Woodford West	0	0	0	0	2	28.57	4	57.14	0	0	1	14.29	6	85.71	7	100
Woodford East	3	12.5	2	8.33	0	0	18	75	0	0	1	4.17	23	95.83	24	100

Table 31 Summary of the coin assemblages from Titchmarsh and its adjacent parishes

Thrapston East have been removed from the analysis. This leaves seven of the eleven large assemblages from the Titchmarsh area for which detailed coin analysis has been possible.

Figure 54 shows the general proportion of coins at each of the findspots from each broad period. Three of the findspots are represented by Iron Age coins. All findspots are well represented by late 4th-century AD coinage, although this is notably lower for Titchmarsh North and Titchmarsh North West and higher for Woodford East. Coins of the early 4th century AD are generally not well represented, but Titchmarsh North and Titchmarsh North West are unusual in that they have higher numbers of these coins than the other findspots. Three of the findspots, Titchmarsh North, Islip North and Titchmarsh East, have significantly higher numbers of late 3rd-century AD coins than the others. Early coinage up until AD 260 is generally uncommon, although Titchmarsh North West includes a significant proportion of coins from this period.

Interesting similarities and differences are already visible between the coin profiles of the respective findspots and it seems that different patterns of coin loss occurred at the different sites. This can be explored further by considering the individual coin profiles against the British mean for coin loss, established by Richard Reece, and that from Northamptonshire, devised from PAS data by Philippa Walton.

Figure 55 shows that whilst the mean level of coin loss at sites from Northamptonshire broadly reflects that from Britain as a whole, there are nuances. This is most readily

apparent in periods 17 (AD 330–48) and 19 (AD 364–78), where coin loss appears to be higher in Northamptonshire than nationally, whilst coin loss in the earlier periods appears generally to be lower in Northamptonshire. It is important to note here that Walton's coin profile for Northamptonshire is based upon coins on the PAS database, and many of these coins come from a small number of intensively metal detected sites. There must therefore be some caution when comparing Walton's mean level for coin loss in Northamptonshire to Reece's national mean, which was established from a sample of 140 sites of different type (Reece 1991). However, it seems likely that the differences do reflect a regional pattern that diverges slightly from the national, and Moorhead has recorded a similar phenomenon in Wiltshire, where the mean level of coin loss is greater in periods 17 and 19 than nationally (Moorhead 2001a, 77–9).

Moorhead suggests that this reflects the rural nature of Roman Wiltshire, with no major Roman towns within the county, and rural sites are often characterized by large numbers of coins from periods 17 and 19. As discussed earlier in this chapter, Northamptonshire also lacks major Roman towns and it is possible that the divergence from the British mean in the PAS coin data is the result of a region dominated by rural settlement. The coin profiles for the different findspots in the Titchmarsh area are here discussed with regard to the national pattern and that from Northamptonshire, so that any peculiarities which may be a result of regional patterns of coin loss can be recognized.

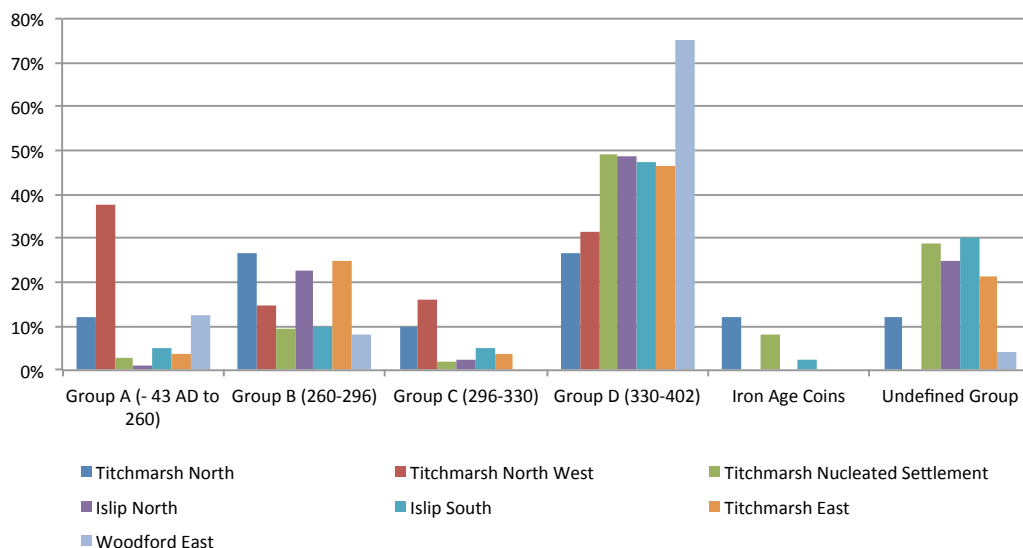


Figure 54 Chart showing a summary of coins from seven findspots in the Titchmarsh area, divided into four broad Roman periods, and with Iron Age coins listed separately

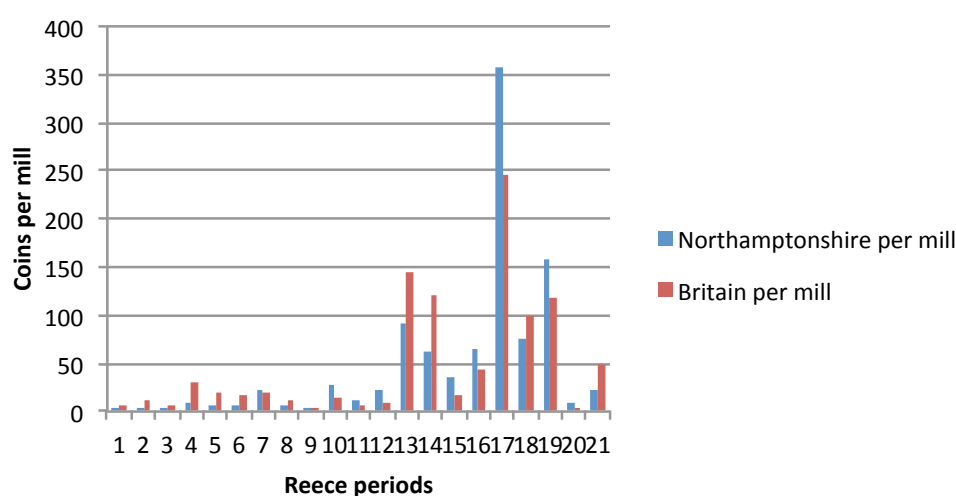


Figure 55 Chart comparing the British mean level of coin loss with Walton's mean for Northamptonshire from Roman coins on the PAS database

Figures 56–7 compare the Titchmarsh area findspots. In each diagram the mean is represented by the x-axis, and the points within the plots reflect the difference from the mean. It is possible to see that the same broad pattern occurs between the Titchmarsh findspots and the national and Northamptonshire mean, but, unsurprisingly, the Titchmarsh findspots are closer to the Northamptonshire mean.

The diagrams shows that in the Titchmarsh area many of the sites fall below the national and Northamptonshire mean level for coin loss quite quickly, and many do not pick up until the 4th century AD, with peaks in periods 17 and 19. This is the case at Islip North and Titchmarsh Town and Islip South peaks significantly in period 19. Woodford East initially follows the mean before increasing significantly between periods 5 (AD 96–117) and 8 (AD 161–80), only to drop below the mean until periods 18 (AD 348–64) and 19 when it reveals significant coin loss. Titchmarsh East exhibits the initial low levels of coin loss seen at some of the other sites before a significant rise in period 14 (AD 275–96), from which point it does not diverge significantly from the mean.

Titchmarsh North and Titchmarsh North-West stand out. Both exhibit coin profiles that initially follow the national mean, but are some way above the

Northamptonshire mean, before rising significantly in periods 10 (AD 193–222) and 11 (AD 222–38), the late 2nd to early 3rd centuries AD. Titchmarsh North West is particularly atypical in its low levels of coin loss in period 17, whilst Titchmarsh North continues with high levels of coin loss until period 18.

Generally speaking, the pattern exhibited by the findspots with high coin loss in periods 17 and 19 appears to be a common phenomenon at rural sites across the country (Moorhead 2001a, 77–9; Reece 2002, 104–5) and it is therefore likely that Islip South, Islip North and Woodford East represent rural settlements within the hinterland of Titchmarsh nucleated settlement. It is interesting that Titchmarsh town itself exhibits a similar coin profile to the surrounding findspots, with a rise at period 17 and a very substantial increase in period 19. This profile places Titchmarsh within the category of towns described by Reece as ‘bad towns’ or ‘rural type towns’ (Reece 2002, 102). Based upon comparison with other sites in the Empire, such as Carthage and Rome, where historical circumstances are known, Reece has suggested that periods of significant coin loss relate to troubled episodes in the settlements. If this were the case, and it is clearly somewhat speculative, it is possible that the comparatively low levels of coin loss at ‘Rural Type

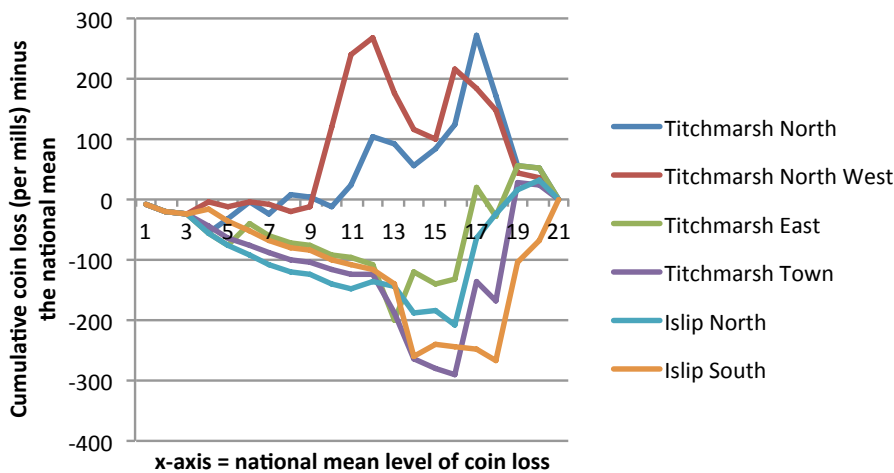


Figure 56 Coin profiles for six PAS findspots in the Titchmarsh case study area showing coin loss against Reece's national mean (x-axis). See Reece 1995 for a full discussion of the method

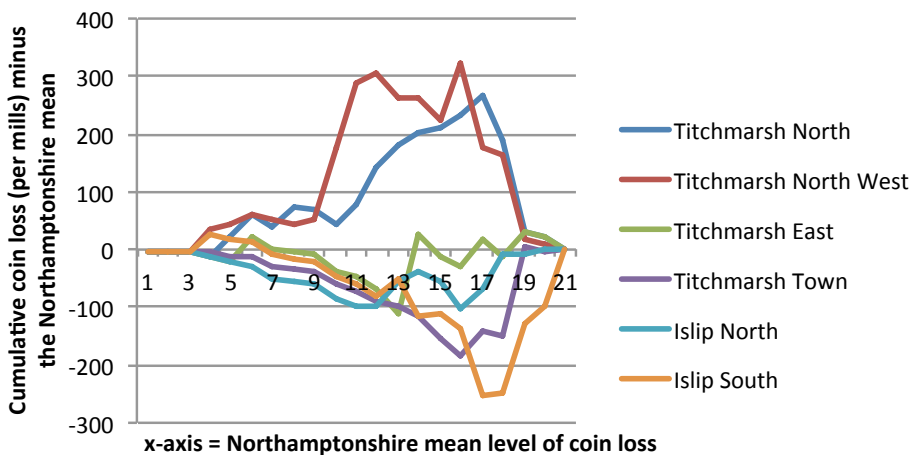


Figure 57 Coin profiles for six PAS findspots in the Titchmarsh case study area showing coin loss against Walton's Northamptonshire mean (x-axis). See Reece 1995 for a full discussion of the method

Towns' in the early Roman period reflect prosperity whilst levels significantly higher than the British mean in the late 4th century AD represent quick and terminal decline (Reece 2002, 103). This would point to prosperity at Titchmarsh until the late 4th century AD, when, if Reece's theory is correct, the town quickly declined.

Of further potential significance regarding the nucleated settlement's coin lists is the observation by a number of scholars that temples often have a high proportion of Valentinianic coins (Moorhead 2001a, 92–5; Reece 2002, 104). It is notable that Titchmarsh Town's most significant peak in coin loss is period 19, and this may represent further evidence for a religious focus at the town. However, as discussed, many of the characteristically rural sites in the area also have high proportions of coins from period 19 and this may in fact reflect a regional trend.

The coin profiles from Titchmarsh North and Titchmarsh North West are of particular note. Before discussing the assemblages from these findspots further it is important to note here that there appears to have been some confusion on the PAS database regarding the findspot information from Titchmarsh North West. The grid reference provided by the finder places the finds in the north west of the parish, although in the notes field on the database the finds are recorded as being from Springfield: the name of the field in which the nucleated settlement lies. However, given that the coin profile is so dissimilar to that of the nucleated settlement, and that it is very similar to that

of Titchmarsh North, approximately 300m away, it seems likely that the grid reference given is correct and that the term 'Springfield' in the findspot notes is misleading. For this reason the grid references have been assumed to be accurate throughout this discussion, but the confusion necessitates a caveat.

Given that they are located within close proximity to one another, and that they share somewhat similar profiles (an early rise in coin loss and a late decline), it is possible that Titchmarsh North and Titchmarsh North West actually form two parts of the same site. The two findspots are discussed as separate sites here, but **Figure 58** presents coin profiles for the two coin assemblages combined. The combined profile follows that of Titchmarsh North West more closely than Titchmarsh North, a result of the fairly extreme peaks in periods 10 (AD 193–222), 11 (AD 222–38), 12 (AD 238–60) and 16 (AD 317–30), as opposed to the more gentle rise in coin loss at Titchmarsh North.

Titchmarsh North West is fairly rapidly set apart from Titchmarsh North and the other findspots with its rise in coin loss from periods 4 to 6 (AD 69–96). It then does not diverge greatly from the mean until periods 10 and 11, declines fairly significantly to period 15, becomes extremely strong again in period 16, before a fast decline.

Titchmarsh North initially drops below the mean before recovering quickly in periods 5 (AD 96–117) and 6 (AD 117–38), fluctuating between periods 7 (AD 138–61) and 10 (AD 193–222) and then steadily increasing until period 17, before

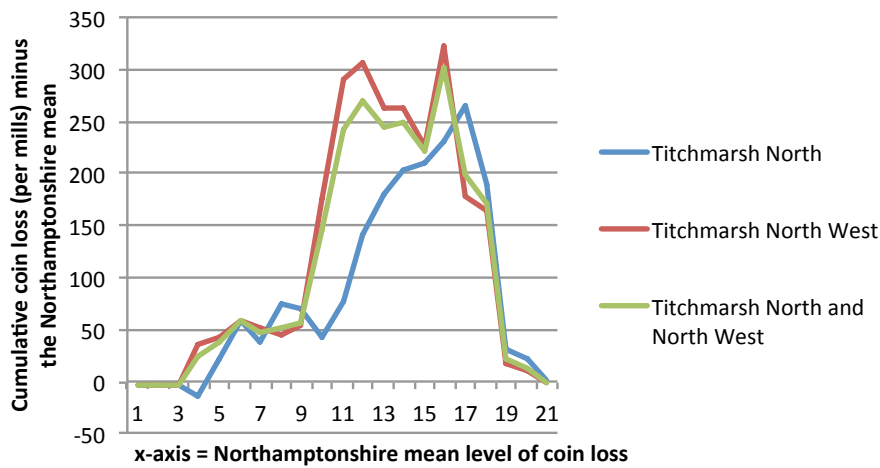


Figure 58 individual coin profiles and combined profiles for Titchmarsh North and Titchmarsh North West

its fairly steep decline. Titchmarsh North is rather more typical than Titchmarsh North West in that it peaks in period 17, although its early rise in coin loss certainly sets it apart from some of the other findspots in the area.

It is tempting to infer from its significantly different coin profile that Titchmarsh North West represents a different settlement history to other sites in the area. The assemblage also includes an unusually high number of finger rings, of which five are silver, two are base silver and two are copper alloy. The dating of these finger rings on the PAS database is not precise, but many are given dates ranging from *c.* AD 200 to the end of the Roman period. The possibility exists that the abnormal peak in the coin record for two periods in the mid 3rd century AD, along with a number of finger rings, possibly of similar date, represents a mixed hoard of silver coinage and finger rings, previously unrecognized as a result of dispersal through plough action. This is clearly very speculative but remains a possibility. However, such a scenario does not explain some of the other peculiarities of the findspot, such as the high levels of coin loss from periods 4 to 6, nor its peak in period 16, when other findspots tend to peak in periods 17 and 19.

In summary, based upon the coin profiles from the different findspots, it would appear that Titchmarsh East, Woodford East, Islip North and Islip South broadly saw historically similar settlement to Titchmarsh nucleated settlement. Titchmarsh North and North West on the other hand appear odd, particularly Titchmarsh North West. It is currently unclear what the differences in the coin profiles indicate, but a difference in the settlement pattern between the findspots in the north and north west of Titchmarsh and others in the surrounding area is a possibility.

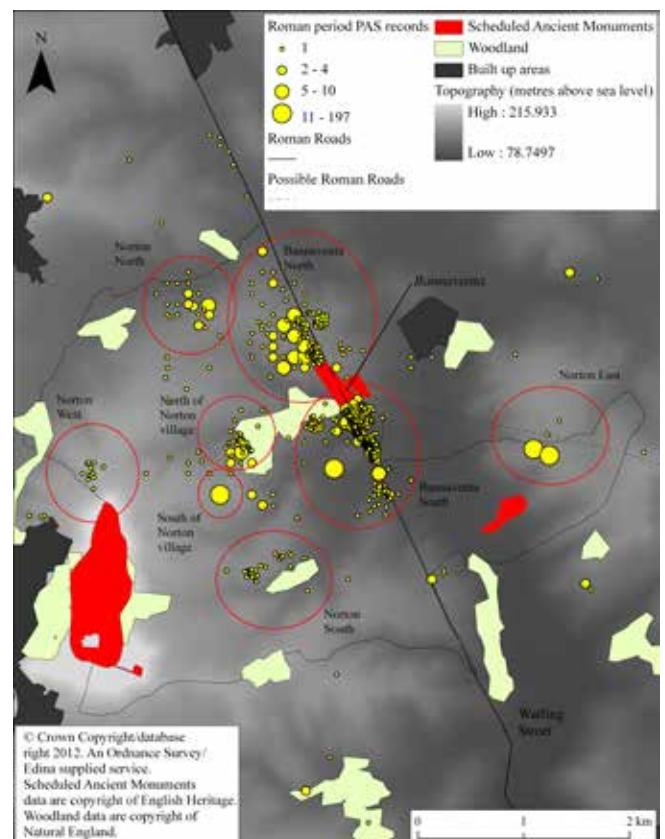
Localized case study: *Bannaventa*

Bannaventa, at Norton/Whilton Lodge, is one of the three defended 'small towns' known from Northamptonshire. The area surrounding the site has been subject to considerable activity by metal detector users and the Norton area is one of the most intensively metal detected areas in the county (**Fig. 59**).

Within the parish of Norton the methodology used in this study has identified 19 individual findspots. Eight of these are large groups and one is medium, making nine findspots which are identifiable as potential sites (**Table 32**).

However, the area has been so intensively searched that the scatters of finds occur widely across much of the parish. Beyond identifying the parish as an area of extreme significance the methodology (which considers finds to be related to a single findspot if there is less than 200m between them) is not ideally suited to discussing such widespread metal detector activity. A single find can form a 'link' between two otherwise discrete clusters, and this does not allow for the recognition of nuances in areas populated by particularly high numbers of finds. In this case study therefore, a less formal, visual approach has been adopted to discuss the significance of the data. **Figure 59** reveals discrete clustering within the general distribution of the data in the parish and it is possible to recognize eight areas of potential significance. Two of these appear to relate directly to the nucleated settlement of *Bannaventa*. However, beyond

Figure 59 Discrete clusters of PAS data in Norton



	Number of findspots	Within 200m of nearest HER record	At least 200m from HER records
Single metal finds	7	0	7
Small metal assemblages	3	2	1
Medium metal assemblages	1	0	1
Large metal assemblages	8	6	2
Non-metal assemblages	0	0	0

Table 32 Summary of assemblage types defined by the methodology in Norton

the area immediately adjacent to the nucleated settlement there are a number of other potentially significant clusters of PAS data (**Fig. 59**).

The absence of developed areas between the clusters which may have prevented detector users from searching, along with the general distribution of single finds of Roman as well as non-Roman date lend support to the idea that these clusters represent discrete foci for activity.

Generally, the significant clusters of PAS data in the Norton area are focused on areas of relatively high terrain, overlooking minor valleys. However, there are a number of areas where PAS data are notably absent. Often these appear to be areas where access is restricted to metal detector users rather than evidence for absence of settlement in the Roman period. Such areas include the high terrain of Borough Hill (a scheduled monument where activity is known from prehistoric through to Roman times), the valley to the east of *Bannaventa* where access is restricted as a result of the Grand Union Canal, the M1 Motorway and the railway network, and to the west, Daventry Reservoir.

Most of these areas (the exception is Borough Hill) are also poorly represented by HER data, yet it is possible that Romano-British settlement did occur, but has been destroyed or hidden by subsequent activity.

Table 33 Summary of the coin assemblages from PAS findspots in Norton

	Group A (AD 43–60)		Group B (260–96)		Group C (296–330)		Group D (330–402)		Iron Age coins		Undefined group		Number of coins with Reece ids		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
<i>Bannaventa</i> North	37	21.02	39	22.16	17	9.66	57	32.39	0	0	26	14.77	110	62.5	176
<i>Bannaventa</i> South	47	11.49	92	22.49	23	5.62	165	40.34	2	0.49	80	19.56	250	61.12	409
Norton North	7	28	3	12	5	20	8	32	1	4	1	4	19	76	25
Norton South	2	18.19	2	18.19	0	0	0	0	0	0	7	63.63	3	27.28	11
North of village	3	8.1	9	24.32	1	2.7	19	51.35	1	2.7	4	10.81	24	64.86	37
South of village	6	40	5	33.33	1	6.67	3	20	0	0	0	0	13	86.67	15
Norton East	1	3.03	1	3.03	0	0	10	30.33	0	0	21	63.63	12	36.36	33
Norton West	0	0	2	25	2	25	3	37.5	0	0	1	12.5	3	37.5	8

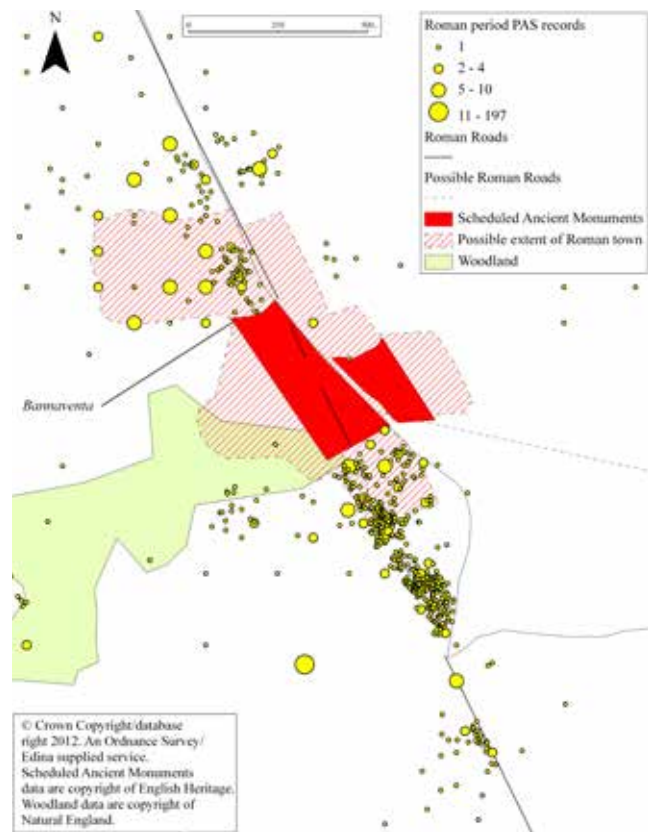


Figure 60 PAS data from *Bannaventa* shown against the scheduled part of the monument and the suspected extent

Unsurprisingly, significant clustering occurs in the immediate vicinity of the *Bannaventa* scheduled monument. **Figure 60** shows the distribution of PAS finds over the suspected extent of the settlement (after Taylor 2002b), in relation to the scheduled area. Clearly, metal detector finds are not available from the scheduled area, but the distribution of the metal detecting material continues beyond the suspected extent of the town for some distance along the line of Watling Street, both to the north and south. This implies that the town may have extended beyond that previously thought, expanding the area defined by Taylor significantly (Taylor 2002b).

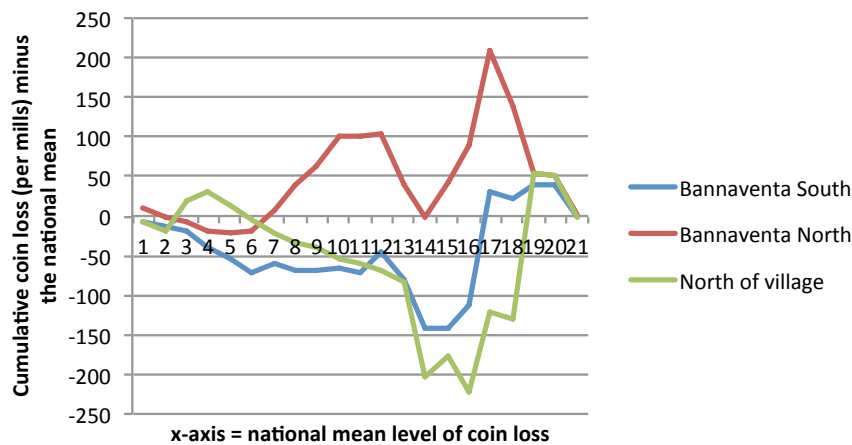


Figure 61 Coin profiles for three PAS findspots in the case study area showing coin loss against the national mean (x-axis). See Reece 1995 for a full discussion of the method

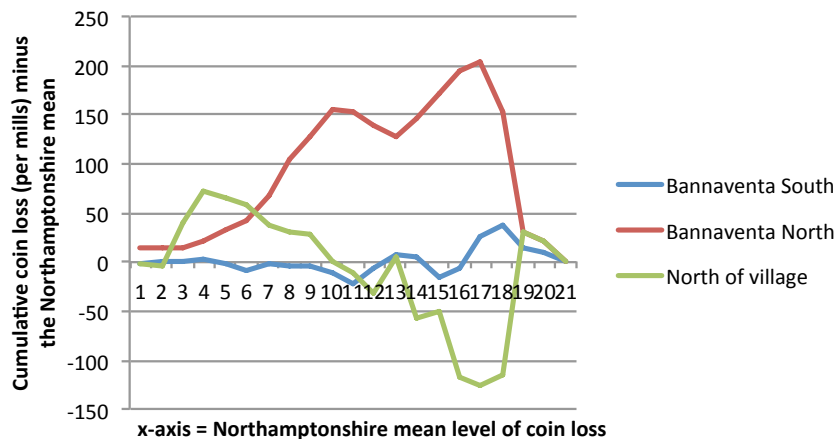


Figure 62 Coin profiles for three PAS findspots in the case study area showing coin loss against Walton's Northamptonshire mean (x-axis). See Reece 1995 for a full discussion of the method

Coin profiles have been produced for the assemblages associated with *Bannaventa* and the surrounding area. Of eight findspots identified as potential 'sites', just three produced sufficiently high numbers of closely datable coins on which to conduct further analysis (**Table 33**).

The results of the coin analysis are presented in **Figures 61–2** which show the coin profiles for the Norton findspots against the national and Northamptonshire mean levels for coin loss. The assemblages from north and south of the scheduled part of *Bannaventa* have been treated as separate to determine whether there are differences in the coin profiles between the different parts of the nucleated settlement.

North of village has a coin profile which seems fairly typical of rural settlements in Britain, similar to some of those seen from Titchmarsh, with values well below the mean until the 4th century AD, peaking in periods 17 and 19.

The coin profiles from *Bannaventa* North and *Bannaventa* South are interesting (**Figs 63–4**). The coin profile for *Bannaventa* North is generally higher than the mean and that of *Bannaventa* South lower. After an initially similar start, coin loss is significantly greater at *Bannaventa* North, whilst *Bannaventa* South hovers around the Northamptonshire mean. However, the two findspots have similar profiles for the end of the Roman period, rising dramatically in period 17 and generally falling off from this point. The rise in coin loss appears to have occurred slightly earlier at *Bannaventa* North, but the pattern between the two is certainly similar in the later periods.

The coin profiles suggest two settlement patterns for the early history of the town. The initial rise in coin loss at *Bannaventa* North may reflect more intensive settlement at this part of the settlement in the early Roman period, or perhaps that very different activities were occurring in the two areas.

The coin profiles for *Bannaventa* North and South and for the nucleated settlement at Titchmarsh are also quite different. Titchmarsh forms almost a mirror image of *Bannaventa* North, whilst *Bannaventa* South is much closer to the Northamptonshire mean (**Fig. 65**).

Bannaventa differs from Titchmarsh in two significant ways. Firstly, it is situated along Watling Street, one of the most important communication routes in Roman Britain. Whilst Titchmarsh is also tied into the communications network, it seems unlikely that the roads servicing the town would have seen such significant traffic as Watling Street. *Bannaventa* was provided with defences in the 2nd or 3rd century AD, whilst Titchmarsh remained an undefended town. It seems possible that the differing coin profiles between the two nucleated settlements reflect differences in the settlement history and status of the two sites. Perhaps *Bannaventa* had a more significant administrative status than Titchmarsh, which may have served predominantly as a market centre for sites in its hinterland, reflected in its 'rural town' type coin profile.

Conclusions

This chapter has shown how PAS data in Northamptonshire often occur in areas where fairly significant archaeological data already exist. This is in contrast to some of the other

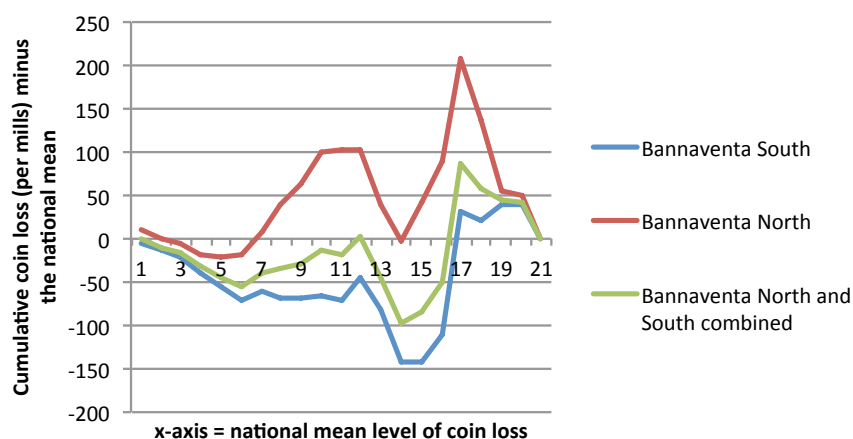


Figure 63 Coin profiles for *Bannaventa* South, *Bannaventa* North and *Bannaventa* North and South combined showing coin loss against the national mean (x-axis). See Reece 1995 for a full discussion of the method

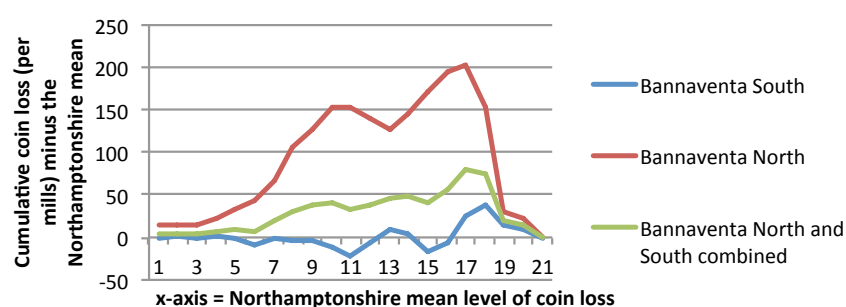


Figure 64 Coin profiles for *Bannaventa* South, *Bannaventa* North and *Bannaventa* North and South combined showing coin loss against the Northamptonshire mean (x-axis)

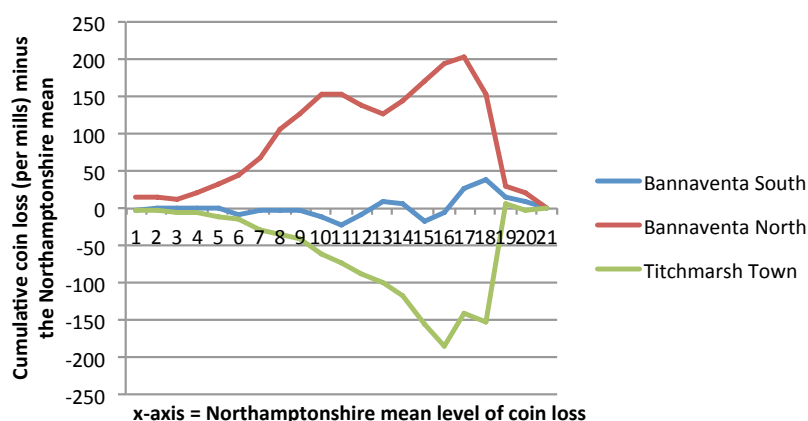


Figure 65 Coin profiles for *Bannaventa* South, *Bannaventa* North and Titchmarsh nucleated settlement, against Walton's Northamptonshire mean (x-axis)

case studies, where the data often provide information about areas with little other archaeological information. This is most likely the result of an unusually high level of archaeological investigation in Northamptonshire, with few areas that have not been subject to some archaeological work, particularly aerial photography. Often, biases within the distribution of metal detector finds correspond to biases in other aspects of the archaeological record: for instance evidence from aerial photography and metal detector finds occur less widely on pasture. Whilst the two sources of archaeological data share biases, they also complement one another in other ways and it has been possible to show examples of PAS data providing potential dating evidence for cropmarks of uncertain date, along with significant evidence for activity at two of the county's nucleated sites and their hinterlands.

PAS data in Northamptonshire relate to 94 potential sites, of which 47 are previously unrecorded. In some cases records associated with these sites on the HER are known predominantly from metal detector or other public finds

reported either prior to the inception of the PAS or recorded on the HER through the PAS, so the number of new sites recognized through the recording of public material can be assumed to be higher than the figure suggested above.

Not all of these sites are amenable to detailed interpretation, and it is often possible only to note the presence of a likely Romano-British site. However, as the localized case studies have shown, in some cases the presence of individual artefact types allow discussion of the possible function of sites and of some of the activities that may have occurred at them. Where coinage occurs and is preserved in sufficient numbers to allow numerical analysis, detailed comparison of different sites is possible. This has been undertaken at both Titchmarsh and *Bannaventa*, where coin profiles have facilitated discussion of the nucleated settlements in relation to other sites in their hinterlands. The addition of non-coin finds recorded on the PAS database augment the records produced by Mark Curteis at Northampton Museum, and have allowed a review of the

evidence for a possible religious focus at the nucleated settlement. Further finds with possible religious associations from the surrounding area raise questions regarding the role of religion within a localized landscape. The presence of a number of likely sites represented by PAS data in the area surrounding the nucleated settlements at Titchmarsh and *Bannaventa* provide additional information for the study of the density of settlement in the hinterland of known nucleated sites (discussed in more detail in Chapter 9, pp. 126–7).

This case study has shown how in regions where archaeological investigation into the Roman period has been particularly intensive, the most useful aspects of PAS data are their potential to augment what is already known, rather than in the recognition of new sites. Whilst a significant strength of PAS data is the information they provide for areas lacking archaeological evidence from other sources, their value for contributing to the understanding of areas that are already reasonably well understood should not be underestimated.

Chapter 7

A Regional Case Study from North Lincolnshire and North East Lincolnshire

Introduction

This chapter is the fourth of five case studies aimed at assessing the value of PAS data as a resource for the study of Romano-British settlement in different regional contexts. Whilst the previous chapters have used counties as regions for analysis, this case study focuses on two combined unitary authorities, North Lincolnshire and North East Lincolnshire (see Chapter 3, pp. 27–9, for the reasons behind the selection of individual case study regions). The chapter follows the same format as the previous case study chapters, and the reader is directed towards the introduction to Chapter 4 for an overview of the structure of the chapter. Two micro-scale case studies are discussed later in the chapter. The first of these, the Hibaldstow area, explores the contribution PAS data can make to the understanding of the hinterland of a Roman ‘small town’ in the case study area. The second, Roxby cum Risby, is an area where metal detecting has been extensive, allowing the density of rural settlement to be explored in an area close to a well-documented Romano-British settlement at Dragonby.

Romano-British settlement in North and North East Lincolnshire

During the Roman period North Lincolnshire is thought to have been within the tribal grouping of the *Corieltauvi*, whose territory also extended into Nottinghamshire, Leicestershire and the rest of Lincolnshire. The area is well represented by evidence for Romano-British settlement and it has been particularly well served by aerial photography over the past thirty years (Jones 1988, 5). However, because of the peculiarities concerning North Lincolnshire’s administrative status, neither of the two recent archaeological resource assessments for the surrounding areas (Yorkshire and the East Midlands) have discussed its archaeology in detail (Manby *et al.* 2003; Cooper 2006), although they occasionally make reference to some of the better known sites. Given the apparently rich evidence for Romano-British settlement, the lack of inclusion of the region in any of the recent syntheses seems something of an oversight, yet it also suggests that the area may be one where PAS data may provide a significant contribution to current knowledge.

Evidence from aerial photography suggests that the Roman period in North Lincolnshire saw an increase in settlement from late prehistory (Jones 1988, 21), and most parishes are represented by Romano-British sites of some form or other (Everson *et al.* 1991, 6). The aerial photographic evidence suggests a bias in the distribution of sites towards lighter soils, although evidence from surface assemblages indicates that some settlements are also well represented on the heavier clays (Jones 1988, 21). One irregularity is noted in the settlement evidence from the eastern half of the Wolds, where cropmarks and artefact findspots are rare, although this may reflect a lack of fieldwork more than the ancient settlement pattern (Jones 1988, 21).

Whilst there are a number of settlements of urban character in Lincolnshire, including the *colonia* at Lincoln, very few occur within the north part of the county covered by this case study. There are no major urban centres within

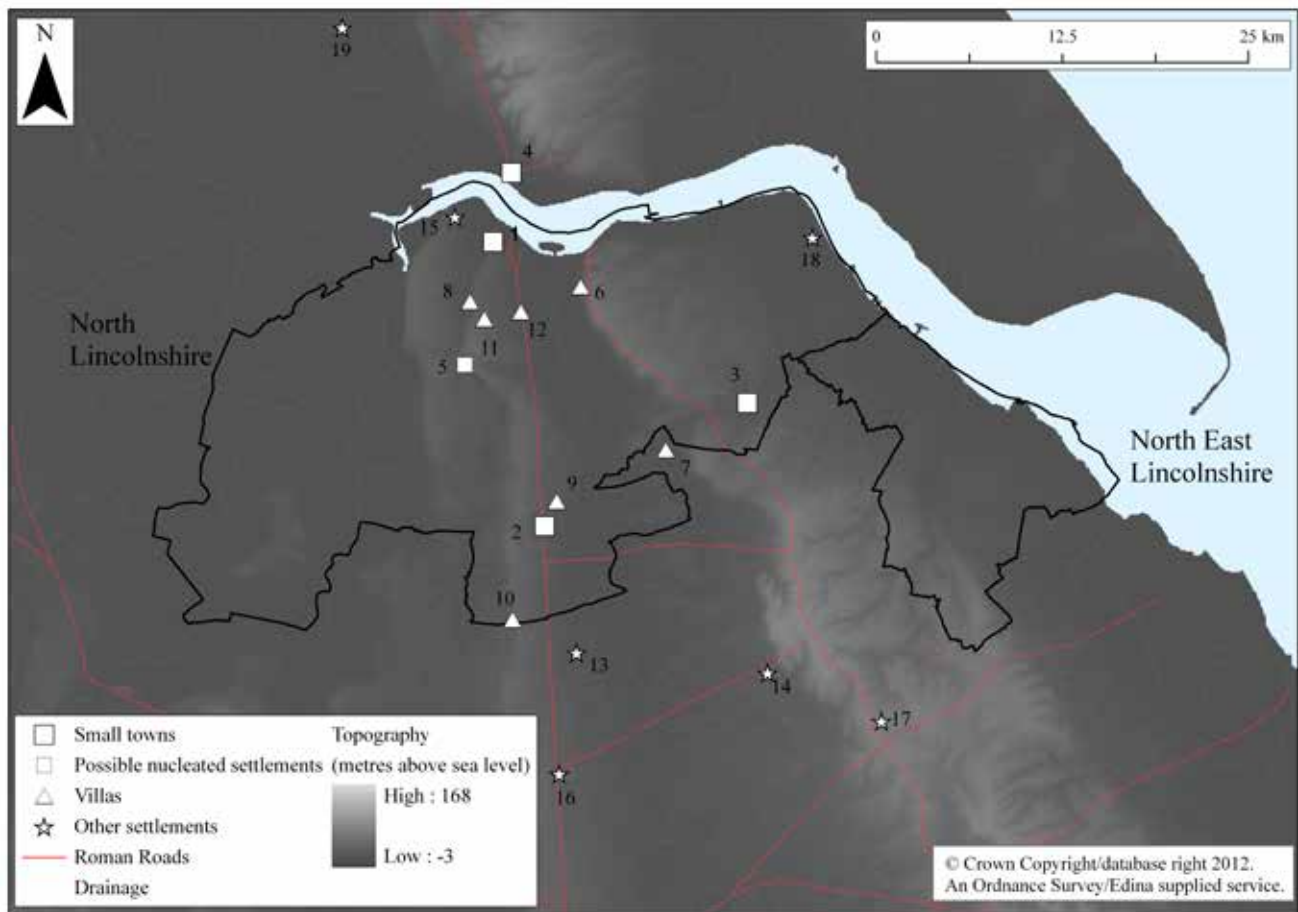


Figure 66 Map showing distribution of major Romano-British sites in North and North East Lincolnshire with major sites discussed in the text numbered. Towns: 1 Winteringham; 2 Hibaldstow; 3 Kirmington; 4 Brough-on-Humber; possible nucleated settlements: 5 Dragonby; villas: 6 Horkstow; 7 Bigby; 8 Winterton; 9 Scawby; 10 Kirton-in-Lindsey; 11 Roxby cum Risby; 12 Roxby cum Risby 2; other settlements: 13 Atterby Carr; 14 Walesby; 15 Whitton; 16 Owmbly; 17 Ludford; 18 East Halton Skitter; 19 Holme-on-Spalding Moor

the region and only a small number of 'small towns'. Winteringham is one of the better known nucleated settlements in the region, and further examples include Hibaldstow, Kirmington and possibly Dragonby (Bennet 2001, 2) (see **Fig. 66** for a map showing sites discussed in the text). Of these Winteringham, Hibaldstow and Dragonby have seen excavation, although only Dragonby and Winteringham have been extensively published (May 1996). Kirmington is principally known from aerial photography, although metalwork from the site has provided some information on the site's chronology and a possible religious function (Leahy 1980b).

Beyond very tenuous evidence from Dragonby and a suggested supply base at Winteringham (Van de Noort 2004, 114) there is little evidence for Roman military activity in North Lincolnshire. A trapezoidal enclosure at Yarborough Camp, Croxton, overlooking the settlement at Kirmington, is seen as possible evidence for a Roman fort (Leahy 2007, 29), though this has not yet been supported by excavation. Hibaldstow has been suggested as the site for a possible early fort, based upon the recovery of some mid 1st-century AD finds, though none are demonstrably military artefacts (Burnham and Wachter 1990, 300).

As elsewhere, work on rural settlement in North Lincolnshire has been dominated by the study of villas and the extent of other types of rural settlement has only begun to be appreciated fairly recently, largely as a result of

increased aerial photography. The general distribution of villas in North Lincolnshire falls within two areas, with a main group to the west along the edge of the Jurassic limestone ridge, and a smaller group to the east on the chalk Wolds (Jones 1988, 22–3). A number of villas are known from the Lindsey Wolds, of which only Horkstow falls within North Lincolnshire, although Bigby is just outside. To the west, on Lincoln Edge, another group of villas occurs, a number of which are within the study area. These include Winterton, Scawby, Kirton-in-Lindsey and Roxby cum Risby (Scott 1993, 98–101; Leahy 2007, 22). Some of these villas received new mosaic pavements in the 4th century AD, and continued to be occupied at least until the end of the 4th century AD (Leahy 2007, 22), and where sufficient evidence exists, appear to have continued from late Iron Age occupation. The villa at Winterton is one of the few in the region to have seen relatively recent excavation (Stead 1976). Here, the general pattern was one of gradual development from a series of late Iron Age enclosures with continuity of settlement until the 4th century AD, with increasing elaboration of the villa building after its construction during the 2nd century AD, including the provision of mosaics during the 2nd and 4th centuries AD. Although not nearly so well excavated or published as the Winterton villa, other villas in the area show similar characteristics, in particular evidence for elaboration in the 4th century AD (Leahy 2007, 22). Some of the villas were initially discovered and

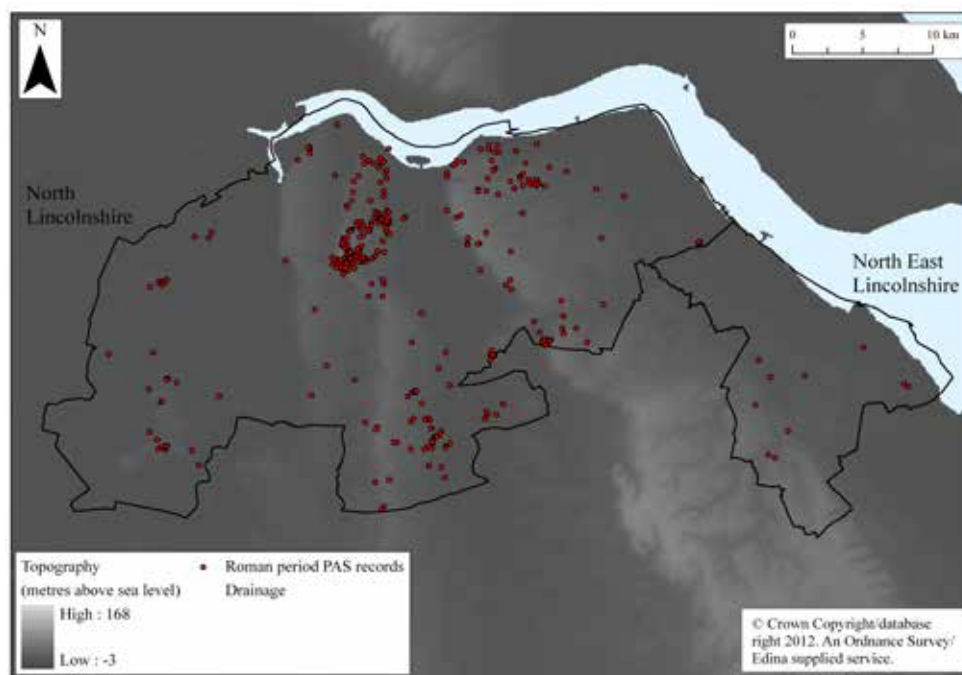


Figure 67 Distribution of Roman PAS data in North and North East Lincolnshire

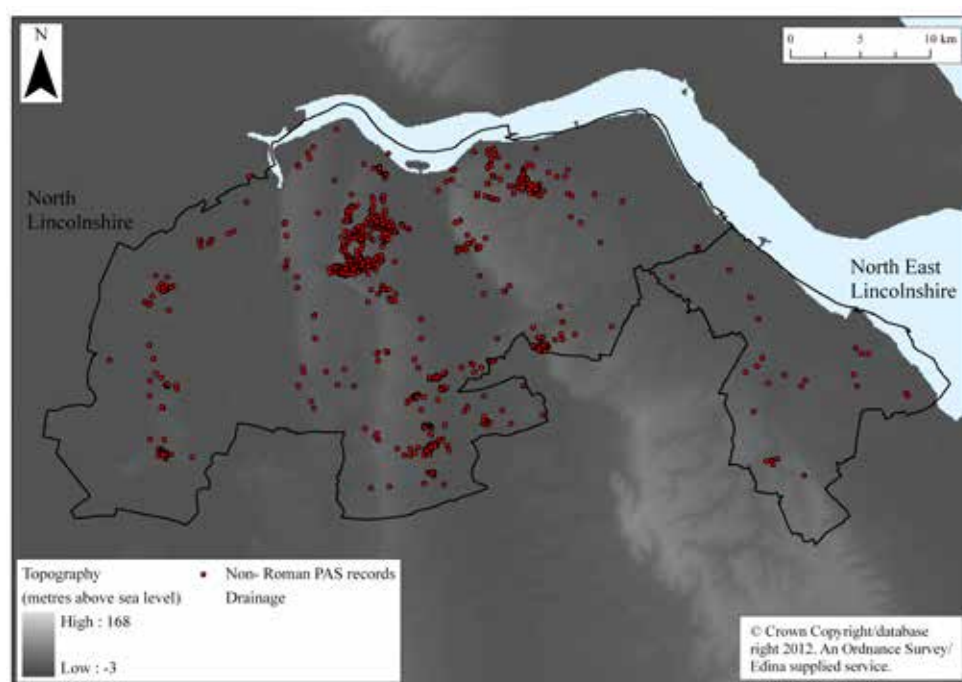


Figure 68 Distribution of non-Roman PAS data in North and North East Lincolnshire

excavated during the 19th century or earlier, and records for sites such as Horkstow, Roxby cum Risby and Scawby are poor (Scott 1993, 98–100). A second villa from Roxby cum Risby is known from aerial photographs which also show probable Iron Age enclosures at the same site, suggesting that development from late Iron Age occupation may have been characteristic of villa development in the region and not restricted to Winterton (Scott 1993, 99).

The evidence for low-status rural settlement in the East Midlands has increased significantly in recent years, chiefly as a result of aerial photography, and such settlements are thought to have outnumbered villas by at least three to one in the East Midlands region (Whitwell 1982, 92–3; Jones 1988, 22). Whilst recent surveys of evidence in the wider region have not incorporated evidence from North and North East Lincolnshire (Jones 1988; Bewley 1998), the

results of these surveys are likely to be indicative of the type of rural settlement in the case study area. Jones recorded examples of roundhouses contained within groups of overlapping enclosures at Atterby Carr and Walesby, whilst at Goltho three timber circular buildings were occupied in succession from *c.* AD 50–200 (Jones 1988, 21). A rural nucleated settlement is also represented by cropmarks at Whitton, immediately south of the river Humber. Here, a ‘ladder’ settlement 300m long and 100m wide is known, where enclosures were arranged on either side of a double ditched droveway, and a Roman date is suggested by ceramic evidence collected from the surface of the site (Van de Noort 2004, 120). Whilst a small number of rural sites are known from aerial photography in the case study area, small farmsteads have generally not been well investigated archaeologically. An exception is a site at East Halton Skitter

in the Lincolnshire Marsh area, which has seen geophysical survey combined with trial trenching, and yielded evidence for a settlement centred on a double-ditched droveway (Neal in Van de Noort 2004, 122). The main area of occupation was surrounded by a substantial enclosure ditch, whilst additional enclosures were located along the droveway (Van de Noort 2004, 122). Pottery from the site indicates that only parts were occupied at any one time, indicating a shift in the focus of activity, although in general the site appears to have been occupied from the mid 1st to the 4th century AD. Further rural settlements occur elsewhere in Lincolnshire, outside the case study area at sites including Owmby and Ludford (Leahy 2007, 22), although these nucleated rural sites have been considered urban by some (Bennet 2001, 2). At Holme-on-Spalding Moor in the East Riding of Yorkshire, on the opposite side of the Humber, intensive field survey has revealed a densely settled rural landscape, with as many as 0.8 sites per km² (Halkon 1987; Millett 1990, 184). Whilst many of the rural sites discussed above fall outside the case study area, it seems likely that North and North East Lincolnshire would have been characterized by a very similar settlement pattern to the surrounding area.

The distribution of PAS data in North and North East Lincolnshire

The final PAS dataset for North and North East Lincolnshire was downloaded on 3 August 2009. At this time there were 1370 records on the PAS database from North and North East Lincolnshire (referred to as the study area from here-on-in). This figure includes 1,288 finds of Roman date as well as 28 of late Iron Age date and 54 early medieval finds which possibly date from as early as the 5th century AD. **Figure 67** plots the distribution of Roman period PAS data and **Figure 68** plots PAS data of all other periods. The two distributions are similar and there are no clear areas of non-Roman activity for which Roman period data are missing, or vice versa. This might reflect consistency in the areas historically chosen for settlement, although it may also reflect areas available for searching by metal detector users. It is notable that both distributions cluster on higher terrain. Contemporary factors which may affect the distribution of PAS data by restricting land available for searching are displayed in **Figure 69**.

Aside from the topography, the distribution of data is clearly influenced by the presence of urban centres at Grimsby in North East Lincolnshire and Scunthorpe in North Lincolnshire, although it should be noted that North East Lincolnshire is also poorly represented by HER data (**Fig. 70**). HER data are more widely distributed than PAS data,

but the pattern is broadly comparable, with areas of higher terrain better represented than the low-lying river valleys, coastal areas and marshes. The distribution of PAS and HER data has been explored more systematically by dividing them based upon the Natural Areas defined by Natural England (Natural England 2009b) (**Tables 34–5**).

Tables 34 and **35** confirm the similarities in the distribution of the two datasets shown in **Figures 69–70**. The North Lincolnshire Coversands and Clays are the most densely populated areas in both datasets and the Humberhead Levels and Lincolnshire coast and marshes are the least well represented.

Based on cropmark evidence, Jones has noted a very similar pattern immediately south of the case study area, in Lincolnshire (Jones 1988). Here, he hypothesized that the absence of cropmarks from low-lying river valleys and marshland may be a result of ridge and furrow continuing to mask underlying archaeology and he suggested that abundant evidence from surface finds indicates that these areas were occupied during the Roman period, despite the lack of evidence from aerial photography (Jones 1988, 13). The absence of PAS data from these areas in North Lincolnshire may suggest that this is not the case, and the lack of cropmarks perhaps reflect genuinely low levels of Romano-British occupation. The similarities in the distribution of the PAS and HER data do seem to suggest a genuine preference for Roman site location on higher terrain. The dearth of non-Roman PAS data from lower lying areas suggests that this pattern is not confined to the Roman period, and that there has historically been a preference for settlement on high land. Aside from Immingham, Grimsby and Cleethorpes on the east coast, the preference for higher terrain is also apparent in the distribution of modern settlements. The Ancholme and Trent valleys for example continue to be quite sparsely populated. It seems likely that the threat of flooding has historically had an effect on the density of settlement in these areas, possibly accounting for the lack of evidence for Roman activity, and perhaps explaining the very low numbers of PAS and HER records from North East Lincolnshire, which is mainly coastal and marshland.

It is important to note that previous case studies have shown how there is a tendency for PAS data to be recovered from land immediately adjacent to modern settlements. This may reflect decisions made by metal detector users to search near the towns or villages in which they live. It is therefore possible that part of the reason for the dearth of PAS data from some sparsely populated areas is that they perhaps attract less attention from metal detector users, biasing the

Table 34 Density of PAS data in North and North East Lincolnshire's distinctive Natural Areas

Natural Area	Density of PAS finds per km ²
North Lincolnshire Coversands and Clays	2.44
Lincolnshire Wolds	1.3
Humber Estuary	0.83
Humberhead Levels	0.53
Lincolnshire Coast and Marshes	0.52

Table 35 Density of HER data in North and North East Lincolnshire's distinctive Natural Areas

Natural Area	Density of HER records per km ²
North Lincolnshire Coversands and Clays	1.25
Humber Estuary	0.92
Lincolnshire Wolds	0.9
Humberhead Levels	0.67
Lincolnshire Coast and Marshes	0.28

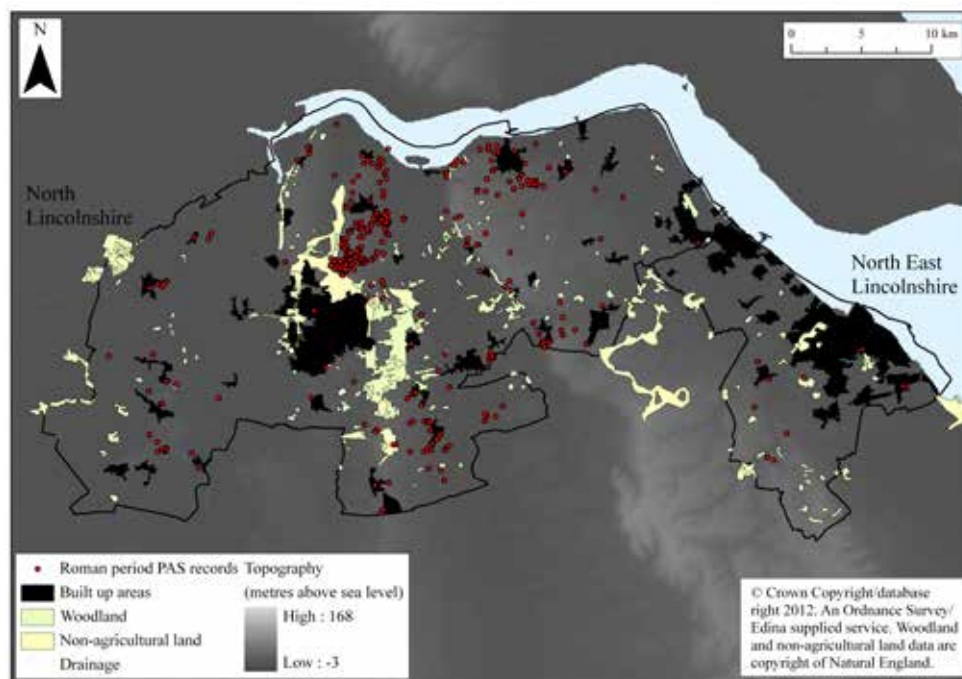


Figure 69 Distribution of Roman PAS data in the North and North East Lincolnshire case study area against major recovery constraints

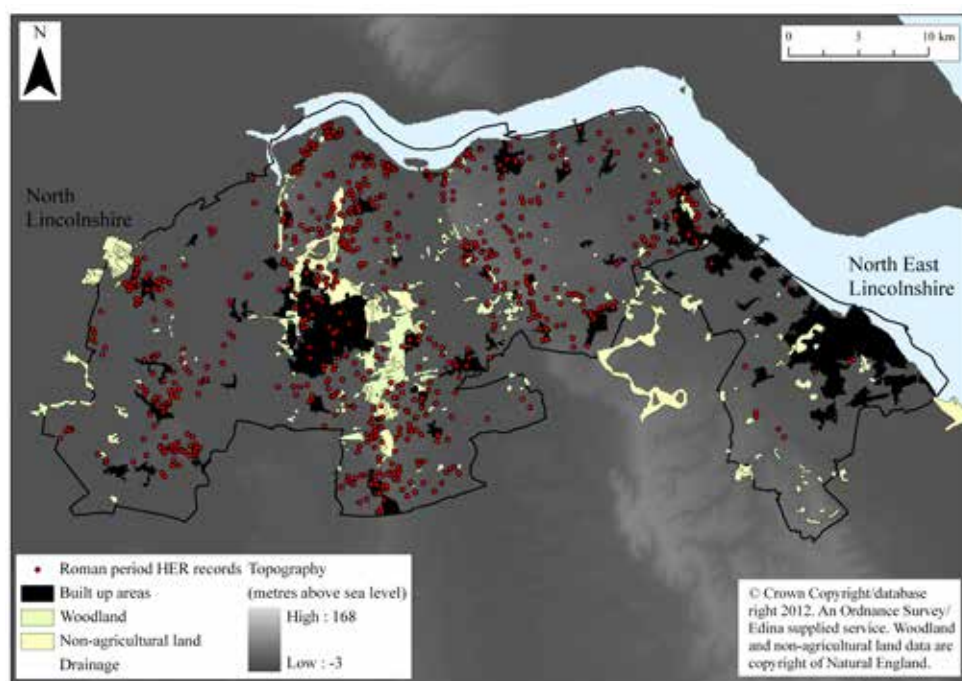


Figure 70 Distribution of Roman and Late Iron Age HER records in the North and North East Lincolnshire case study area

distribution somewhat. A further consideration ought to be whether the rate of discovery of artefacts in low-lying areas might be affected by the gradual deposition of alluvial sediments during flooding, perhaps resulting in artefacts being at a depth beyond the reach of most metal detector signals. However, if this were the case one might still expect to see artefacts reported from more recent historical periods, and as shown above, this is not the case.

Much of North Lincolnshire is represented by good quality agricultural land, and this is reflected by the fact that 78 per cent of the district is under arable cultivation (North Lincolnshire Council 2008). The distribution of PAS data does not appear to be closely associated with the availability of fertile land, and their low numbers in the low lying areas should probably not be seen as a result of a lack of arable land on which to detect.

An alternative explanation for the distribution of PAS data might be that metal detector users have tended to deliberately target areas perceived as likely to be rich in archaeological artefacts, based on existing archaeological knowledge of the area. Certainly, a kernel density analysis of PAS data demonstrates that some of the areas where PAS data are densest occur in close proximity to known archaeological sites (**Fig. 71**), particularly in the area around Scunthorpe, near sites at Dragonby, Winterton and Roxby cum Risby (see pp. 96–9). However, dense clusters of PAS data also occur on the east side of the northern extremity of the Lincolnshire Wolds, and east of Ermine Street, at Brigg. So whilst PAS data proliferate around known archaeological sites they are not restricted to them, and the lack of finds from the lowlands probably cannot simply be explained in these terms.

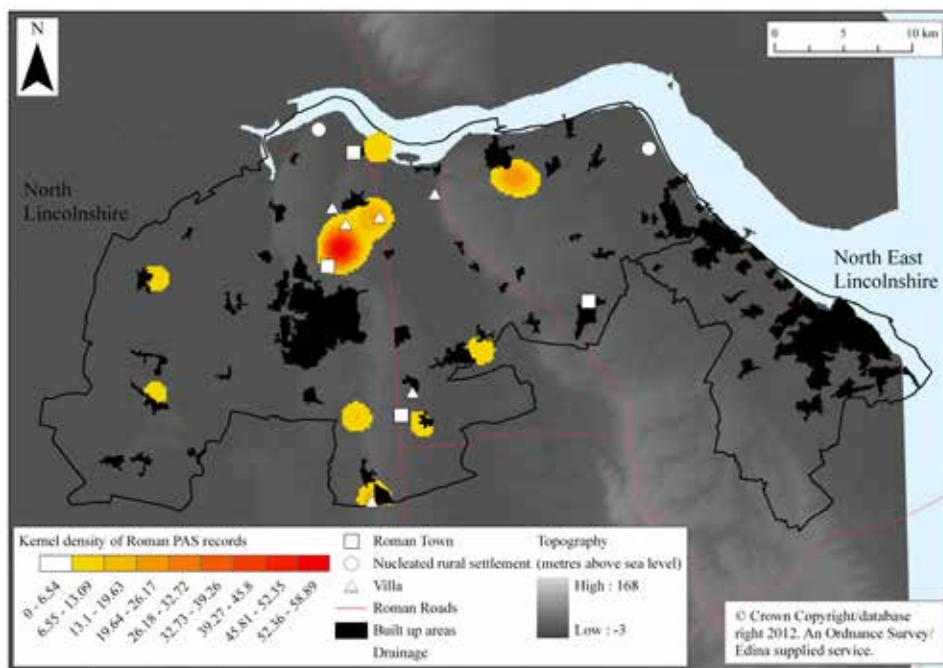


Figure 71 Kernel density plot for PAS data in North and North East Lincolnshire

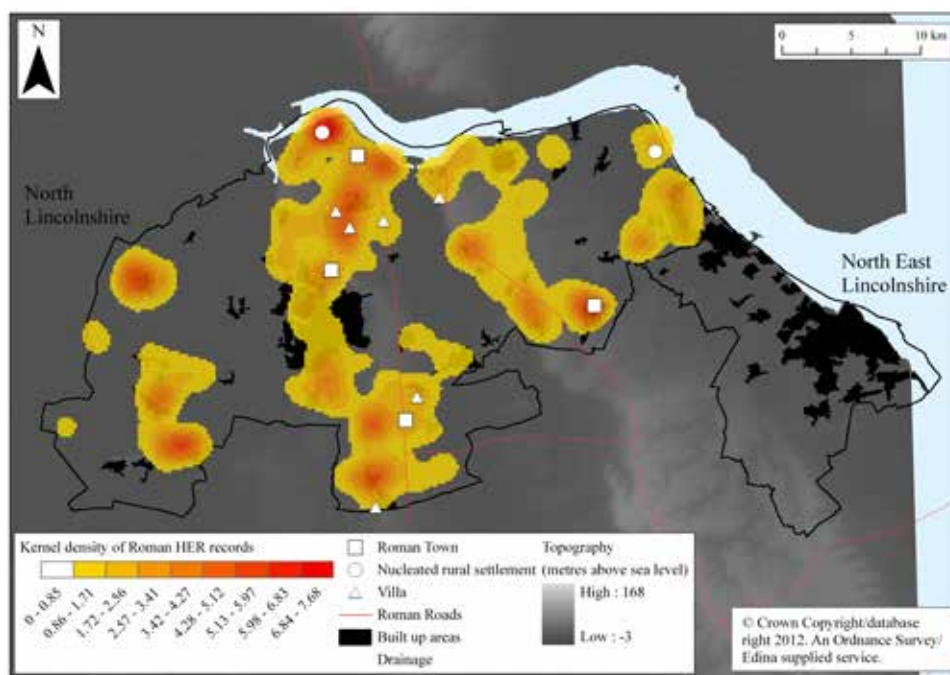


Figure 72 Kernel density plot for HER data in North and North East Lincolnshire

A density plot for HER data (**Fig. 72**) emphasizes how they are also concentrated on higher terrain, but within these areas they are more evenly distributed than PAS data. This contrast reflects the intrinsic differences between the two datasets, with HER data incorporating evidence from a wide range of sources including evidence from aerial photography, excavation and casual finds. The dominance of a few small areas within the PAS distribution is likely to reflect intensive activity by a small number of individuals in particular locations.

Categorization of PAS findspots in North and North East Lincolnshire

Some of the dense clusters of PAS data displayed in **Fig. 71** provide the focus for two detailed case studies discussed below. However, there are a large number of findspots

represented by relatively low quantities of finds which have not been revealed in the kernel density analysis, which may nonetheless represent important evidence for Romano-British activity. The methodology presented in Chapter 3 has allowed identification of 198 individual findspots in North and North East Lincolnshire (**Table 36**). Forty-eight of these are potential sites and of these 29 (60.4 per cent) may relate to previously unrecorded activity. Because it is not easy to determine precisely how many sites are represented by HER data in North and North East Lincolnshire, data on Romano-British sites provided by the National Monuments Record (NMR) have been used to consider how the PAS sites contribute to the numbers of Roman settlements known in the area. The NMR data contains 138 individual Romano-British settlements in North and North East Lincolnshire, ranging from rural

Findspot type	Number of findspots at least 200m away from nearest HER record	Percentage of findspots at least 200m away from nearest HER record	Number of findspots located within 200m of HER record	Percentage of findspots within 200m of HER record	Total number of findspots	Total percentage of findspots
Single metal objects	69	71.88%	27	28.13%	96	100.00%
Small assemblages	36	81.82%	8	18.18%	44	100.00%
Medium assemblages	15	57.69%	11	42.31%	26	100.00%
Large assemblages	14	63.64%	8	36.36%	22	100.00%
Non-metal	8	80.00%	2	20.00%	10	100.00%
Total	142	71.72%	56	28.28%	198	100.00%

Table 36 Table showing 'new' and previously known findspots in North and North East Lincolnshire according to findspot category (see Chapter 3 for methodology)

settlements to small towns. Based on this figure, the 29 potential new sites represented by PAS data represent an increase of up to 21 per cent, along with enhanced information for a further 13.8 per cent.

The composition of medium and large groups of PAS data in North and North East Lincolnshire

Tables 37 and **38** summarize the composition of medium and large groups of PAS finds. As in the other case studies, coinage dominates the assemblages. Coins were recovered from every large findspot and they outnumber all other finds put together at most findspots of this size. Coinage is also the most common artefact type in the medium groups, but here the dominance is less marked and five are entirely unrepresented by coinage. It is difficult to determine whether these findspots are sites where coins were not used during the Roman period, whether they are early sites and therefore have not produced the late Roman coinage so ubiquitous at many sites, or if the absence of coins is a product of recovery and reporting bias.

After coinage, dress accessories are the next most common find type and these are absent from just two of the large groups. Nineteen of the 26 medium groups (73.1 per cent) are represented by dress accessories. Other artefact types are less frequently represented, and were represented in 14 of the 22 large groups (63.6 per cent) and just 6 of the 26 medium groups (32.1 per cent). Ceramics were reported from seven of the large groups and six of the medium groups. However, their presence or absence at individual findspots is more likely to represent the variability amongst detector users to collect and report them than their presence in the ploughsoil, and most sites are likely to have been represented by ceramic material, even if it has not been reported.

Several parishes surrounding the 'small town' at Hibaldstow are the focus of a detailed case study later in this chapter, followed by a discussions of PAS data in the parish of Roxby cum Risby. A number of other locations have also produced groups of finds worthy of note. At Winteringham, the location of one of the urban settlements in the study area, a large assemblage of 48 artefacts recorded by the PAS is

Table 37 Summary of assemblage composition of large PAS findspots (11 metal artefacts or more) in North and North East Lincolnshire. C = coins, D = dress accessories, Cer = ceramics, O = other

Findspot	C	D	Cer	O	Total	Findspot	C	D	Cer	O	Total
Alkborough 1	12	7	0	1	20	Manton 1	40	11	0	2	53
Barnetby Le Wold 7	7	1	6	5	19	Roxby Cum Risby 11	120	7	28	5	160
Barton Upon Humber 16	51	2	0	2	55	Roxby Cum Risby 22	4	9	0	1	14
Barton Upon Humber 20	44	5	4	4	57	Roxby Cum Risby 4	9	2	1	2	14
Crowle 2	19	6	0	1	26	Roxby Cum Risby 43	44	3	3	0	50
Crowle 3	15	2	0	1	18	Roxby Cum Risby 8	7	5	3	0	15
Epworth 3	16	2	18	0	36	South Killingholme	14	2	0	1	17
Hatcliffe 15	7	4	0	4	15	Ulceby	12	0	0	0	12
Hibladstow 12	3	9	0	0	12	Winteringham	46	1	0	1	48
Hibladstow 7	11	1	0	0	12	Winterton 6	12	0	0	0	12
Kirton in Lindsey 1	70	2	0	0	72	Wrawby	52	1	0	1	54

Findspot	C	D	Cer	O	Total	Findspot	C	D	Cer	O	Total
Alkborough 2	5	4	0	1	10	Hibaldstow 4	5	2	0	0	7
Barnetby Le Wold 3	5	5	0	0	10	Hibaldstow 6	7	3	0	0	10
Barrow Upon Humber 1	5	0	0	0	5	Irby	0	8	0	1	9
Barton Upon Humber 15	5	0	0	0	5	Kirmington	5	0	0	0	5
Barton Upon Humber 2	7	0	0	0	7	Kirton in Lindsey 2	5	0	0	0	5
Barton Upon Humber 5	7	0	0	0	7	Roxby cum Risby 12	6	1	44	0	51
Belton 1	0	9	0	0	9	Roxby cum Risby 15	7	0	1	1	9
Belton 2	5	1	1	0	7	Roxby cum Risby 25	6	3	3	0	12
Elsham 1	1	4	0	2	7	Roxby cum Risby 42	8	2	3	0	13
Epworth 2	0	6	0	0	6	Scawby 2	3	3	0	0	6
Haxey 4	6	4	10	0	20	Scawby 3	0	4	0	2	6
Hibaldstow 1	9	1	0	0	10	South Ferriby 1	6	1	0	2	9
Hibaldstow 3	0	5	0	0	5	Whitton 1	2	3	0	0	5

Table 38 Summary of assemblage composition of medium PAS findspots (5–10 metal artefacts) in North and North East Lincolnshire. Note the category ‘other’ includes non-metal artefacts, which takes the total number of finds above 10 in some cases. C = coins, D = dress accessories, Cer = ceramics, O = other

possible evidence for a further settlement, some distance from other Romano-British sites recorded on the HER from the area.

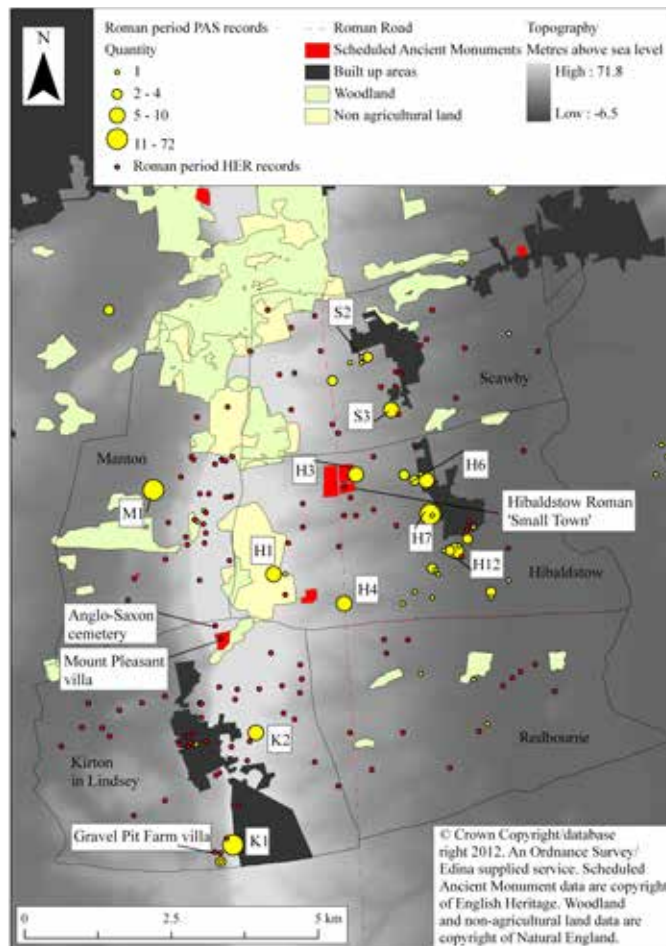
At Barnetby Le Wold a number of fragments of up to two figurines along with a miniature votive horse bit in an assemblage of 19 artefacts are interesting, particularly given the lack of any HER data in the immediate area. Dense concentrations of PAS data around Barton upon Humber perhaps relate to a number of discrete settlements, with some clustering in areas not populated by HER data. Any of these findspots could have been selected for more detailed investigation and might benefit from further study in the future. The next section considers the evidence represented by PAS data from the Hibaldstow area in some detail.

Localized case study: Hibaldstow

Hibaldstow has already been introduced as the site of one of the ‘small towns’ in the case study area. This localized case study focuses on the parish of Hibaldstow and four other parishes in the area around the ‘small town’ from which large quantities of PAS data are available: Manton, Scawby, Redbourne and Kirton in Lindsey (**Fig. 73**).

The area lies approximately three miles south east of Scunthorpe in the Ancholme Valley and the Ancholme flows north along the east border of Redbourne, Hibaldstow and Scawby. Ermine Street passes north-to-south through these three parishes and a second Roman road passes east from Ermine Street along the parish boundary between Redbourne and Hibaldstow, linking up with sites at North Kelsey and Caistor (Burnham and Wachter 1990, 300). **Fig. 73** includes the distribution of HER data in the area. Not all HER records from the five parishes can be interpreted as

Figure 73 Distribution of PAS and HER records in the case study parishes with sites mentioned in the text listed. H = Hibaldstow, K = Kirton in Lindsey, M = Manton, S = Scawby



Parish	Single finds	Small groups	Medium groups	Large groups	Non-metal	Total PAS 'sites'	New 'sites'	HER records	HER 'sites'	Total PAS and HER sites
Manton	0	1	0	1	0	1	1	29	8	9
Scawby	1	1	2	0	1	2	1	22	12	13
Hibaldstow	6	2	4	2	0	6	4	19	8	12
Kirton in Lindsey	1	1	1	1	0	2	0	46	19	19
Redbourne	3	0	0	0	0	0	0	14	9	9
Total	11	5	7	4	1	11	6	130	56	62

Table 39 'New' and previously known findspots according to findspot category (discussed in Chapter 3)

sites, but based upon descriptions of the evidence available on the HER there are possibly 56 known Romano-British sites in the area. Few are well understood and most are recorded as cropmarks or scatters of surface material, with little information available on the character or chronology of settlement. As well as the scheduled Roman site at Hibaldstow, notable sites include a scheduled villa at Mount Pleasant in Kirton in Lindsey, known from ploughed out material distributed over approximately two hectares (Loughlin and Miller 1979, 203; Scott 1993, 99).

A second possible villa has been identified through surface finds and geophysical survey in the south of the parish (Scott 1993, 99). Neither has seen any modern excavation. During the 19th century, a 5th- to 7th-century AD Anglo-Saxon cremation cemetery was excavated in Kirton and this has seen limited modern excavation (Leahy 1980a). Whether this cemetery is related to Romano-British settlement in the area is unclear. Most excavation of Romano-British sites in the area has focused on the town at Hibaldstow, a roadside settlement which has evidence for occupation from the late 1st century AD until the 4th century AD, with no evidence for any previous Iron Age settlement (May 1996, 604). The character of the settlement is not well understood, though buildings have been interpreted as shops or workshops based upon their plans (Burnham and Wachter

1990, 302). There are 226 metal objects of late Iron Age and Roman date recorded on the PAS database from the five parishes, along with four non-metal finds. All are recorded to a minimum of six figure grid references, and many have been provided with eight or ten figure grid references, so the spatial information is reasonably good. The finds from the parishes have been reported by 16 individuals, although 163 finds (72.1 per cent) were reported by just three finders. Two of these finders are local to the area whilst the most prolific reporter, responsible for 72 (31.8 per cent) of the finds, came from Leeds. This is quite surprising as in all other detailed case studies the finders responsible for reporting the most material have been local residents.

Eleven potential sites are represented by PAS data in the five parishes (**Table 39**) and six of these represent 'new sites' according to the methodology presented in Chapter 3 (see pp. 21–6). This represents an increase of 10.7 per cent. The 62 combined PAS and HER sites are distributed over an area of 81.2 km², suggesting a density of 0.8 sites per km². This is comparable to the density of sites calculated from intensive survey at Holme-on-Spalding Moor on the north side of the Humber (Halkon (1987) cited in Millett 1990, 184).

The distribution of settlement in the area, based upon PAS and HER data, suggests a preference for the slopes of the valley, with less evidence for settlement in the Ancholme

Table 40 Chronological evidence at PAS 'sites' in the North and North East Lincolnshire case study area based upon evidence from coins and brooches

Findspot	Iron Age	Early Roman evidence (before AD 250)	Late Roman evidence (after AD 250)	Limited dating evidence	Total
Hibaldstow 12	1	9	1	1	12
Hibaldstow 7	1	2	8	1	12
Kirton in Lindsey 2	0	0	5	0	5
Manton 1	0	14	31	8	53
Hibaldstow 1	0	3	7	0	10
Hibaldstow 3	0	3	0	2	5
Hibaldstow 4	0	1	5	1	7
Hibaldstow 6	0	4	6	0	10
Kirton in Lindsey 1	0	2	69	1	72
Scawby 2	2	3	0	1	6
Scawby 3	1	2	3	0	6
Total	5	43	135	15	198

Valley itself, perhaps a result of the risk of flooding. The distribution of PAS data is clearly affected by built-up areas, as well as areas of non-agricultural land including disused quarries and woodland. Aside from a cluster of HER records relating to evaluation ahead of development in the village of Kirton in Lindsey, the distribution of HER data is also largely rural, reflecting the reliance on casual finds of surface material and aerial photography for evidence for Romano-British settlement.

As chronological information is lacking from many of the sites recorded on the HER, this is an area where PAS data can contribute significantly. **Table 40** shows how nine of the eleven (81.8 per cent) PAS ‘sites’ in the five parishes produced artefacts of early and late Roman date. In some cases this is based upon a small number of finds so interpretation must be somewhat tentative, but this may suggest that many sites in the area saw activity which spanned the Roman period.

Kirton in Lindsey 2 is the only site not to have produced early Roman evidence, whilst Scawby 2 and Hibaldstow 3 are the only ones where late Roman finds were not reported. Iron Age activity was suggested by finds at four (36.4 per cent) of the sites, suggesting continuity between late Iron Age and Roman settlement at some sites.

The finds from Hibaldstow 12 occur approximately 150m north west of a sub-rectangular enclosure of around 2 hectares, known from aerial photography but not reliably dated. The PAS finds provide potential dating evidence for this site, suggesting it may be late Iron Age or Roman in date, although any relationship between the finds and the enclosure remains speculative in the absence of fieldwork.

Only two of the PAS sites in the five parishes have produced enough coins to allow formal coin analysis (**Table 41**; see Chapter 3, pp. 26–7 for a discussion of the method). Kirton in Lindsey 1, represented by 51 coins where Reece numbers could be attributed, produced a fairly typical rural pattern with low coin loss until period 15 (AD 296–317), a significant rise in periods 16 (AD 317–30) and 17 (AD 330–348) and a peak in period 19 (AD 364–78) (**Fig. 74**). The coin profile for Manton 1 is more unusual, with a rise in coin loss from period 10 (AD 193–222) and a peak in period 13 (AD 260–75).

It is also notable that this findspot produced more 1st- to 2nd-century AD brooches than any other, indicating that the site saw significant early Roman activity. However, only 22 coins from Manton 1 were sufficiently well preserved to allow precise dating, so the unusual coin profile may be a result of a skew caused by what are in reality small numbers

Table 41 Coins with Reece numbers from sites in the North and North East Lincolnshire case study parishes (H = Hibaldstow, K = Kirton in Lindsey, M = Manton, S = Scawby)

Date (AD)	Reece period	H 1	H 3	H 4	H 6	H 7	H 12	K 1	K 2	M 1	S 2	S 3
–41	1	0	0	0	0	0	1	0	0	0	2	0
41–54	2	0	0	0	0	0	0	0	0	0	0	0
54–69	3	0	0	0	0	0	0	0	0	0	0	0
69–96	4	1	0	0	0	0	0	0	0	0	0	0
96–117	5	0	0	0	0	0	0	0	0	0	0	0
117–38	6	0	0	0	0	1	0	0	0	0	0	0
138–61	7	0	0	0	0	0	0	0	0	1	0	0
161–80	8	0	0	0	0	0	0	0	0	0	1	0
180–93	9	0	0	0	0	0	0	0	0	0	0	0
193–222	10	1	0	0	1	1	0	0	0	2	0	0
222–38	11	0	0	0	0	0	0	0	0	2	0	0
238–60	12	0	0	0	0	0	1	0	0	0	0	0
260–75	13	0	0	1	0	2	0	8	0	4	0	0
275–96	14	0	0	1	1	1	0	5	0	0	0	0
296–317	15	0	0	0	2	0	0	2	0	1	0	0
317–30	16	0	0	0	1	1	0	7	0	1	0	0
330–48	17	1	0	2	1	0	0	16	0	6	0	0
348–64	18	0	0	0	0	3	1	3	1	2	0	0
364–78	19	0	0	0	1	0	0	17	2	2	0	0
378–88	20	0	0	0	0	0	0	0	0	1	0	0
388–402	21	0	0	0	0	0	0	1	0	0	0	0
402+	22	0	0	0	0	0	0	0	0	0	0	0
Total number of coins with Reece numbers		3	0	4	7	9	3	59	3	22	3	0

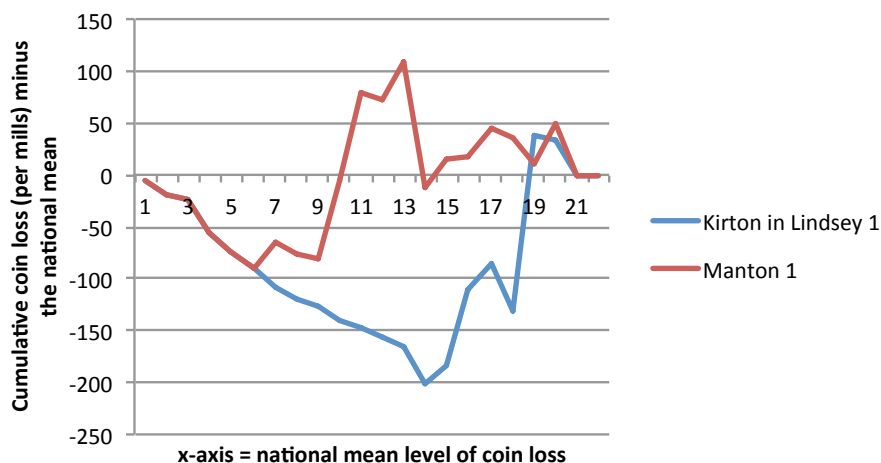


Figure 74 Coin profiles for Kirton in Lindsey 1 and Manton 1 (x-axis = British mean). See Reece 1995 for a full discussion of the method

of 2nd- and 3rd-century AD coins. Furthermore, all records from Manton 1 were recorded in 1998, shortly after the inception of the PAS. Those recorded from Kirton in Lindsey were recorded in 2008. It is quite likely that the difference in coin profiles between the two findspots reflects the work undertaken by FLOs over ten years to encourage finders to report all finds, even common Roman coins which might appear to finders to be of little importance. It would therefore be dangerous to read much significance into the unusual coin profile at Manton 1 without further investigation. At the moment it is probably safest to regard both Manton 1 and Kirton in Lindsey 1 as domestic rural settlements of some sort, with some evidence for activity from the 1st or 2nd centuries AD until the 4th century AD.

Based upon the combined evidence from PAS and HER data, Hibaldstow and its surrounding parishes would seem to have been a fairly densely populated area of Romano-British settlement in the hinterland of a small town. The PAS data contribute to the understanding of the chronology of settlement in the area, which is otherwise fairly poorly documented. Some findspots have produced limited evidence for continuity between late Iron Age and early Roman settlement, which often seems to continue into the late Roman period. There is little evidence for late Iron Age or early Roman settlement which ceases or shifts before the late Roman period and consequently the impact that the construction of Ermine Street had on the existing population remains somewhat unclear. Given that the roadside settlement at Hibaldstow has produced little evidence for late Iron Age settlement and that only four of the eleven PAS sites in the area produced late Iron Age coins, it is possible that the area saw increased activity during the Roman period, perhaps associated with the construction of the road and the development of the small town. The Anglo-Saxon cemetery at Kirton in Lindsey and the presence of early medieval finds at the PAS sites at Hibaldstow 1, 4, 6 and 7, Manton, Scawby 2 and Kirton in Lindsey 2 suggests that some settlements in the area saw continued or renewed activity in the post-Roman period.

Localized case study: Roxby cum Risby

Roxby cum Risby is situated approximately two miles north of Scunthorpe and four miles south of the Humber. The west part of the parish is occupied by a ridge of coversand with

lower terrain in the centre and east, draining to the River Ancholme which flows through the eastern extremity of the parish. Ermine Street passes through the parish linking with the Roman small town at Winteringham just south of Humber. Two other important Romano-British sites are situated just outside the parish. Winterton villa is just over the north parish boundary and the nucleated settlement at Dragonby is immediately to the south west. Both of these have been excavated. The parish itself is well represented by Romano-British data on the HER with 36 records. Many of these refer to casual finds of surface material which may relate to off-site activity, but nine settlements are recorded. These include a building with a mosaic pavement discovered in Roxby village in the late 17th century (Scott 1993, 125) and which has more recently been shown to be an aisled villa (Farrimond 1990). A further possible villa is represented by cropmarks adjacent to Ermine Street (Loughlin and Miller 1979, 211; Scott 1993, 99). A large coin hoard was reportedly recovered from Risby Warren in the south of the parish during the late 17th century, though its exact location is unclear and it is not certain that the coins were Roman (Robertson 2000, 430). Most of the sites in the parish are known only as cropmarks and there has been little excavation. As well as the Romano-British material the parish includes two scheduled monuments of medieval date, a medieval village at Sawcliffe and the earthwork remains of a church at High Risby.

A large quantity of Roman finds have been reported to the PAS from Roxby cum Risby and the finds are widely distributed (**Fig. 75**). All finds from the parish are recorded to a six figure grid reference or better. The metal finds have been reported by 40 individuals, most of whom are members of Scunthorpe Metal Detecting Society. A small number of individuals are responsible for quite large numbers of finds however, and one reported 118 of the 313 (37.7 per cent) items of metalwork. Twenty of the finders (50 per cent) reported just one artefact.

Two major clusters of PAS data are recognizable. One is on the ridge in the west of the parish whilst the other is further east, adjacent to Ermine Street. Using the methodology presented in Chapter 3, 48 distinct findspots have been recognized in the parish. Nine are potential 'sites' and five of these (55.6 per cent) are previously unrecorded. Aside from these potential sites the distribution of single finds and small

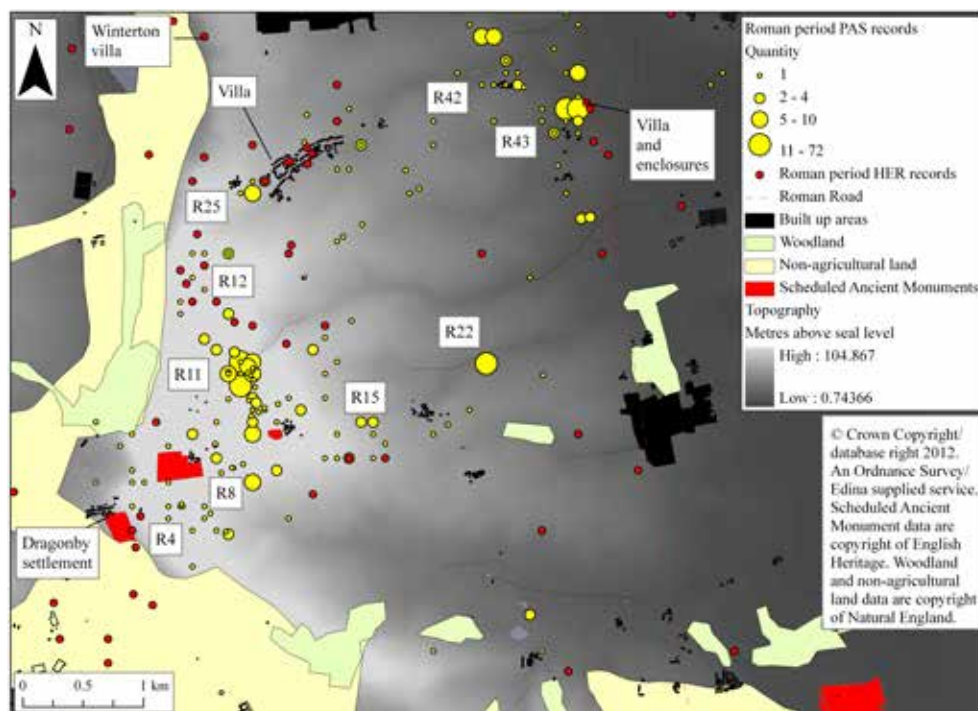


Figure 75 Distribution of PAS and HER records in Roxby cum Risby with sites discussed in the text labelled (R = Roxby cum Risby)

groups of metalwork may represent scatters of artefacts associated with the wider use of the landscape. The five new sites represented by PAS data represent an increase of 55.6 per cent to the nine already recorded on the HER from the parish. Combined, they suggest a density of Romano-British settlement of 0.7 sites per km². This is comparable to the density calculation for the Hibaldstow area (p. 94).

The PAS data provide valuable chronological information for Romano-British settlement in the parish (**Table 42**), particularly as there is limited dating evidence available for many sites recorded on the HER. The group of finds from Roxby cum Risby 11 are of particular note, where the finds occur within 100–200m of the location of the possible villa known from cropmarks. The PAS data do not necessarily confirm that the site is a villa, but the presence of finds which date from the 1st to the 4th century AD at least add support to its interpretation as Romano-British. All but one PAS site produced at least one early Roman find and every site produced some late Roman material. This suggests that many of the sites in the parish may have seen continued occupation from the early through to late Roman periods. No sites produced artefacts or coins which are diagnostically Iron Age in date, although it is possible that some of the brooches grouped within the ‘early Roman’ category were in use prior to the conquest. The absence of definite Iron Age finds at any of the ‘sites’ should not necessarily be seen as evidence for a lack of activity in the Iron Age, particularly as a late Iron Age brooch (NLM7201) and two Corieltauvian coins (NLM-A01FB1 and NLM-BAE2E3) occur as single finds in the parish. The evidence from elsewhere in North Lincolnshire often displays continuity and the nearby settlement at Dragonby may have been a locally important centre during the Iron Age (May 1996, 630–1), so Iron Age activity at some of the sites might be expected, even if there is currently little evidence to support it.

At Dragonby the paucity of conquest period and Flavian pottery has been seen as evidence for a reduction in

population in the period at this time, suggesting that the settlement saw disruption for several decades before it flourished again, declining once more in the late 3rd to 4th centuries AD (May 1996, 631). The apparent decline in the fortunes of Dragonby in the 1st century AD has been seen as possible evidence for a shift in importance towards the town at Winterringham, perhaps associated with the construction of Ermine Street (May 1996, 634). None of the PAS sites have produced 1st-century AD coins, but Roxby cum Risby 8, 11, 22, 25 and 43 have all produced brooches of mid 1st-century

Table 42 Chronological evidence at PAS ‘sites’ in Roxby-cum-Risby based upon evidence from coins and brooches

Findspot	Iron Age	Early Roman evidence	Late Roman evidence	Limited dating evidence	Total
Roxby Cum Risby 4	0	0	7	6	13
Roxby Cum Risby 8	0	4	7	1	12
Roxby Cum Risby 11	0	9	110	13	132
Roxby cum Risby 12	0	4	3	0	7
Roxby cum Risby 15	0	1	5	2	8
Roxby Cum Risby 22	0	8	3	3	14
Roxby cum Risby 25	0	3	5	1	9
Roxby cum Risby 42	0	1	8	1	10
Roxby Cum Risby 43	0	3	40	4	47
Total	0	33	188	31	252

Date (AD)	Reece period	R 25	R 15	R 12	R 42	R 22	R 11	R 4	R 8	R 43	Dragonby	Winterton
–41	1	0	0	0	0	0	0	0	0	0	56	1
41–54	2	0	0	0	0	0	0	0	0	0	9	0
54–69	3	0	0	0	0	0	0	0	0	0	0	0
69–96	4	0	0	0	0	0	0	0	0	0	8	1
96–117	5	0	0	1	0	0	0	0	0	0	3	1
117–38	6	0	0	0	0	0	0	0	0	0	2	2
138–61	7	0	0	0	0	0	0	0	0	0	3	0
161–80	8	0	0	0	0	0	2	0	0	0	2	0
180–93	9	0	0	1	0	0	0	0	0	0	2	0
193–222	10	0	1	1	0	0	1	0	0	0	6	1
222–38	11	0	0	0	0	0	1	0	0	0	0	2
238–60	12	0	0	0	0	0	3	0	0	0	4	0
260–75	13	0	0	0	0	0	12	1	1	4	31	18
275–96	14	0	0	0	0	0	4	0	1	0	7	9
296–317	15	0	0	1	0	0	3	0	0	3	3	1
317–30	16	0	0	0	0	1	0	0	0	0	3	6
330–48	17	2	0	2	2	0	24	0	1	7	87	25
348–64	18	0	2	0	0	0	5	0	1	7	37	7
364–78	19	1	0	0	0	0	12	1	0	2	34	20
378–88	20	0	0	0	0	0	0	0	0	0	1	0
388–402	21	0	0	0	0	0	0	0	0	0	0	1
402+	22	0	0	0	0	0	0	0	0	0	0	0
Total number of coins with Reece numbers		3	3	6	2	1	67	2	4	23	298	95

Table 43 Coins with Reece numbers from PAS sites in Roxby-cum-Risby, and from the excavations at Dragonby (May 1996) and Winterton (Stead 1976) (R = Roxby-cum-Risby)

AD date (**Table 42**), and whilst it is difficult to know how long brooches remained in use, this suggests that these sites saw activity at least from the 1st century AD.

It is tempting to suggest that the 1st-century AD finds at the PAS sites might reflect settlement shift from Dragonby at a time when the site saw disruption, but all types of brooch represented at the PAS sites were also present in the excavated assemblage from Dragonby and so there is little evidence to support such a hypothesis. In any case, our imprecise understanding of the chronology of brooches makes their use for comparing close periods of occupation between sites difficult.

Two PAS sites, Roxby cum Risby 11 and 43, produced enough identifiable coins to allow formal analysis of their coin profiles (**Table 43** and **Fig. 76**), and these have been compared with profiles produced from the coins from the excavations at Dragonby and Winterton villa (**Fig. 77**).

Roxby cum Risby 11 and 43 share broadly similar coin profiles. Both have rises in period 13 (AD 260–75), and high levels of coin loss in the mid to late 4th century, with a major peak in period 18 (AD 348–68) at Roxby cum Risby 43 and in period 19 (AD 364–378) at Roxby cum Risby 11. Roxby cum Risby 11 recovers from its initial slow start a little earlier than Roxby cum Risby 43, from period 8 (AD 161–80), though as

only 23 coins with identifiable Reece periods were reported from the latter this difference may not be meaningful.

The pattern is broadly similar at Winterton and Dragonby. At Dragonby, if the Iron Age coins are included, the pattern of coin loss starts well above average, reflecting the history of Iron Age occupation at the site. After this, the pattern broadly follows the British mean until period 13, when it starts to decline, picking up again from period 17 and peaking at period 19. The pattern of coin loss at Winterton is slightly closer to those at the PAS sites, with below average coin loss until period 13, a rise in period 17 and a peak in period 19. The profiles from the excavated sites and the PAS sites are fairly characteristic of rural Romano-British sites (Reece 2002, 102).

The chronological evidence available from coins and brooches at the PAS sites suggests that occupation was contemporary with Romano-British settlement at Dragonby and Winterton, raising questions about the social and economic relationship between sites in a densely settled area. This has been discussed by May, who considered the possibility that Dragonby may have existed as a dependant settlement of one of the villas in the area, either Winterton or the excavated villa at Roxby (May 1996, 634–8). It is difficult to reliably establish a site hierarchy for the PAS sites and

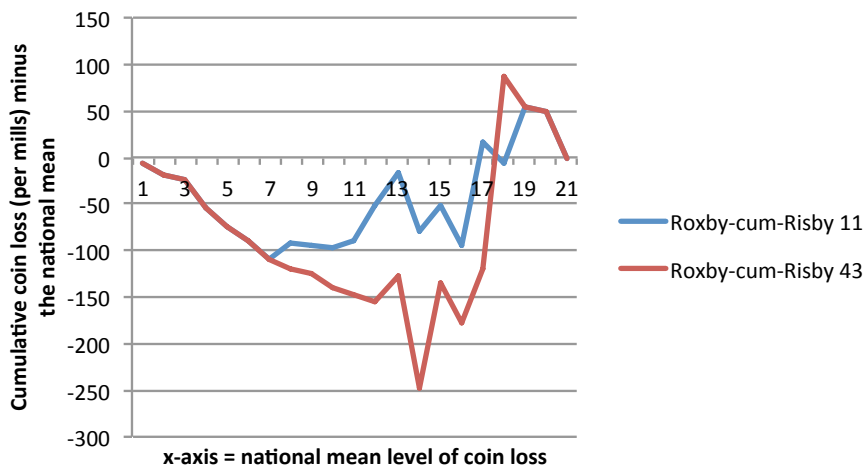


Figure 76 Coin profiles for Roxby-cum-Risby 11 and 43 (x-axis = British mean). See Reece 1995 for a full discussion of the method

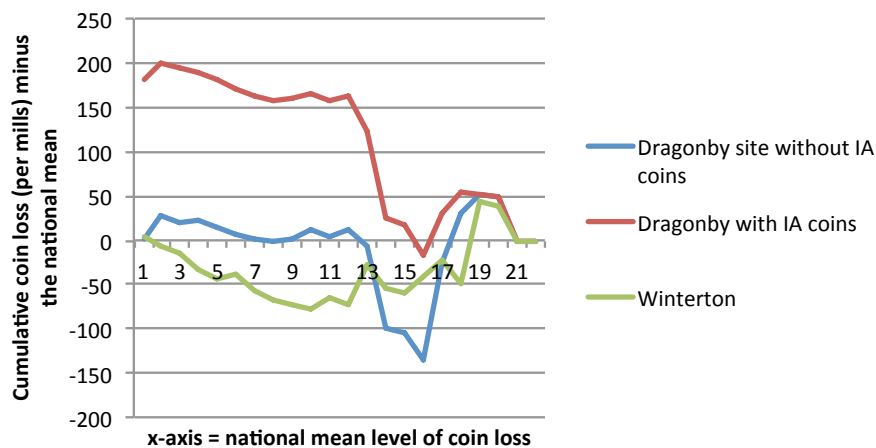


Figure 77 Coin profiles for Dragonby and Winterton (x-axis = British mean). See Reece 1995 for a full discussion of the method

other settlements known from the region, but it is possible that the PAS sites reflect rural settlements within the estate of a villa. However, the hierarchy of the villas in the area is still unclear, and so establishing which, if any, the PAS sites may have been associated with is beset with problems. However, the PAS data from Roxby cum Risby do show that the area was densely populated, with several distinct, probably rural sites, and the relationship between individual settlements may have been complex.

Conclusions

This chapter has shown how, as elsewhere, the general distribution of PAS data partly reflects constraints on metal detecting, with data unavailable from built-up areas and non-agricultural land but is more widespread in rural areas adjacent to modern settlements. Aside from the constraints on detecting, the distribution of PAS data also seems to reflect a preference for Romano-British sites to be located on areas of higher terrain, a pattern supported by the distribution of HER data, probably reflecting avoidance of areas with poor drainage. This suggests that although the distribution of PAS data is subject to bias represented by constraints on land searched, they also have potential to

contribute to the understanding of broad patterns of settlement. Both PAS and HER data are poorly represented in North East Lincolnshire, and whilst the presence of modern Grimsby places a constraint on detecting, the low quantities of records from both datasets from the region might reflect its predominantly low lying terrain.

The methodology recognized 48 sites represented by PAS data, 29 (60.4 per cent) of which are 'new', an increase of up to 21 per cent based upon NMR data from the region. Coinage was by far the most commonly reported type of find, followed by dress accessories, a pattern also seen in the previous regional case studies. Twenty of the PAS sites were incorporated into the discussion of the two localized case studies discussed above, which respectively focused on five parishes in the Hibaldstow area and Roxby cum Risby. All sites produced groups of artefacts characteristic of rural settlement, and both case studies indicated densely populated Romano-British landscapes. Most sites produced chronological evidence spanning the Roman period, and some sites around Hibaldstow produced finds suggesting continuity from the late Iron Age. There was no evidence for this at Roxby cum Risby.

Chapter 8

A Regional Case Study from Cumbria

Introduction

This chapter presents a final regional case study which explores the value of PAS data as a resource for the study of Romano-British settlement in Cumbria. The chapter follows the same format as the previous case study chapters, and the reader is directed towards the introduction to Chapter 4 for an overview of the chapter structure. Cumbria is not well represented by ‘small towns’, villas or many of the other traditional indices of ‘Romanization’ seen further south in the province, and is better known for its Roman military archaeology, notably Hadrian’s Wall and its associated forts. The purpose of this chapter is to explore the potential contribution that amateur metal detector finds have for understanding a region where ‘Roman’ sites are predominantly military, and where the presence of Rome seemingly had less impact on ‘native’ settlement than elsewhere.

Romano-British settlement in Cumbria

Cumbria is thought to have been part of the tribal area of the *Brigantes*, and may have been the territory of a sub-group, named as the *Carvetii* by Ptolemy, who possibly had their tribal capital at Carlisle, whilst a further sub-group, the *Setantii*, may have had territory in the south of the county (Philpott 2006, 62). Although the county is large, the extensive mountains of the Lake District mean that parts are very sparsely populated, and the rural character and lack of large urban areas in the county mean that many areas have been significantly less intensively investigated through development-led archaeology than in the previous case studies (McCarthy 2002, 18). Archaeological investigation in the county has therefore often been research driven, with a resulting emphasis on military sites (Philpott 2006, 59), aptly demonstrated by the publication of a volume focusing on the military installations in the Solway area in north-west Cumbria (Wilson and Caruana 2004), which barely touches upon the relatively rich evidence for rural settlement in this part of the county (Wilson 2004, 19). This is partially a result of the previous research agenda in the study of Roman Britain in general, where military, urban and high status sites attracted more attention from archaeologists than rural sites of lower status (see Chapter 2, p. 11, for a fuller discussion). Archaeologists interested in the Roman military in Britain have been particularly drawn towards Cumbria because of the presence of several forts associated with the northern conquest of Britain and of course Hadrian’s Wall, which runs across the north of the county between Bowness in the west and Waterhead in the east, where it continues through Northumberland to the Tyne (**Fig. 78**). However, the bias towards military sites in the Romano-British settlement pattern also partly reflects the difficulties of dating sites that are not clearly diagnostic based upon their ground plans, as closely datable Romano-British artefacts are notably less abundant in the north west than in the south and east of England (Chitty and Brennand 2005, 12; Philpott 2006, 59; Taylor 2007, 43).

A disproportionate number of published volumes concerned with the Solway Plain (Bewley 1994; McCarthy 2002; Wilson and Caruana 2004) are partly a result of the presence of the western section of Hadrian’s Wall, but also

reflect the relative susceptibility for the land in the Solway Plain to form crop and soil marks. Whilst many scholars have focused on military remains, there have been efforts to redress the balance, notably Bewley's survey of prehistoric and 'native' settlement (1994). The typical Romano-British rural settlements of the county appear to have been fairly small, enclosed settlements, and these are well known from the lowland parts of the county such as the Solway Plain and the Petteril and Eden Valleys, which are well represented by evidence from aerial photography. However, unenclosed or open settlements are also recorded from upland areas where a lack of arable farming has facilitated their preservation as earthworks. Such settlements are not well recorded from areas where earthworks do not survive, yet it is likely that they were once more widespread (Taylor 2007, 43).

Some rural sites show evidence for carefully planned organization around field systems, although other farmsteads appear in isolation or in irregular groups with limited evidence for planned arrangement (Philpott 2006, 76). At Yanwath Wood, near Penrith, a stone-walled and partially ditched settlement was situated amid a system of enclosed fields (Higham 1983, 55), whilst comparable, morphologically similar sites associated with field systems are known from Aughtertree Fell, Crosby Ravensworth, Crosby Garrett and Waitby (Higham 1983, 56; Philpott 2006, 77). Aerial photographic evidence for field systems at sites such as Eller Beck in the Lune Valley in Lancashire indicates that many lowland sites shared a similar settlement pattern (Shotter 2004b, 142; Philpott 2006, 77). Architecturally, the traditional Iron Age roundhouse continues in use during the Roman period and a number of roundhouses have been excavated at sites such as Kirkby Thore, Crosshill, Silloth Hall, Wolsty Hall and Matterdale (Philpott 2006, 75).

Whilst *vici* are associated with almost all of the forts known from the county, the towns that form part of the Romano-British settlement pattern in all of the previous case study regions are almost unknown, and Carlisle appears to be the only non-*vicus* urban site in Cumbria. Villas appear to be entirely absent from the rural settlement pattern, although rural sites in the north of the county have produced some evidence for a change to rectilinear construction in the 3rd century AD (Higham *et al.* 1983; Philpott 2006, 75). Cumbria therefore differs from the other regional case studies in several ways.

The distribution of PAS data in Cumbria

The final PAS dataset for Cumbria was downloaded on 13 October 2008, at which time there were 656 records for Cumbria of Roman date. These figures include 18 artefacts of late Iron Age date. As some of these records are associated with multiple artefacts the records relate to a total of 1108 individual finds. Of this total, 434 are metal objects, whilst 674 are non-metal.

These are predominantly ceramics and most were found as casual surface finds during unsystematic fieldwalking/beachcombing. The majority of these (79.7 per cent) were recovered from near the fort at Beckfoot, in the parish of Holme St Cuthbert (discussed below). Amongst the non-metal finds there are 107 individual records of human

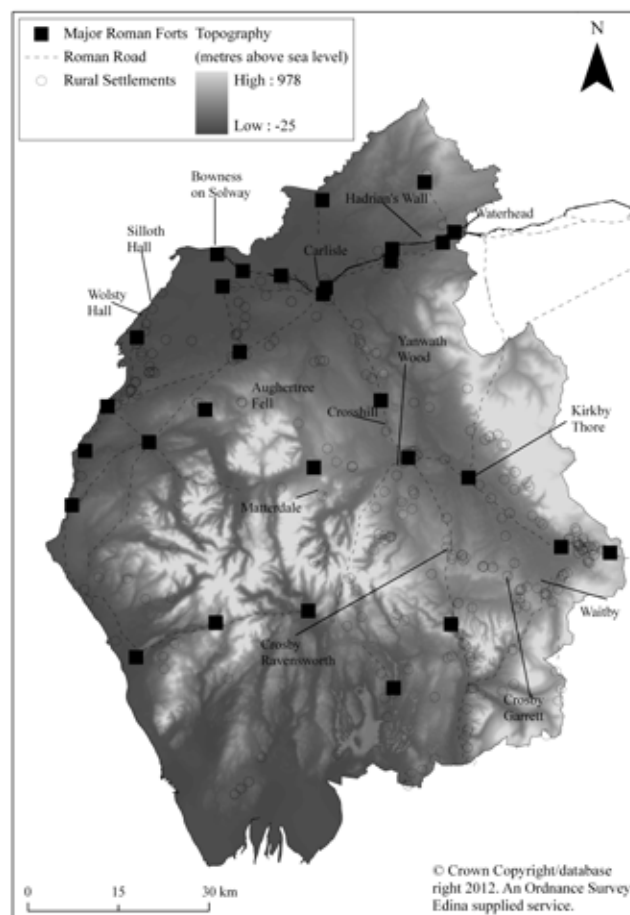


Figure 78 Map of major forts and rural settlements in Cumbria with those discussed in the text named

remains, all from Beckfoot Roman cemetery. As human remains are not artefacts these have been excluded from the statistics and discussion of the distribution of PAS data, as large quantities of individual bones would skew the results significantly. However, reference is made to the finds of human bone where relevant. After removal of the skeletal material, there are 567 non-metal artefacts on the PAS database. The higher proportion of non-metal finds in Cumbria compared to other counties reflects the relative paucity of metalwork from the non-military Romano-British sites in the county, although the large quantity of ceramics from Beckfoot skews the pattern considerably. It should be noted that the PAS dataset was downloaded before the important discovery of a late 1st- to mid 3rd-century AD Roman military parade helmet, recovered by a metal detector user in Crosby Garrett in 2010, and recorded by the PAS after it had been presented for sale to Christie's Auction House (Worrell *et al.* 2010b) (PAS reference LANCUM-E48D73). It has been suggested that the helmet was deliberately broken and folded before burial (Worrell *et al.* 2010b, 22), although the reason for its deposition is not known.

Figure 79 maps the distribution of Roman PAS data in Cumbria, whilst **Figure 80** presents the distribution of non-Roman PAS finds. The non-Roman data are slightly more widely distributed, although they are generally confined to the same areas, with concentrations of both data in the lower lying areas such as the Solway Plain, the Eden Valley and the Cumbria Fells and Dales. The mountainous parts of the county in the Lake District and the Pennines are

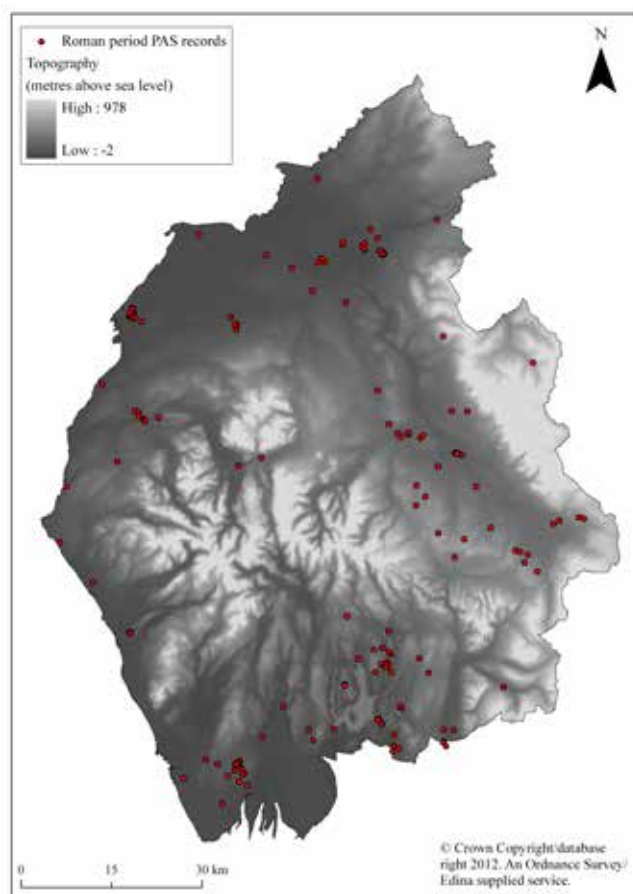


Figure 79 Distribution of Roman PAS records in Cumbria

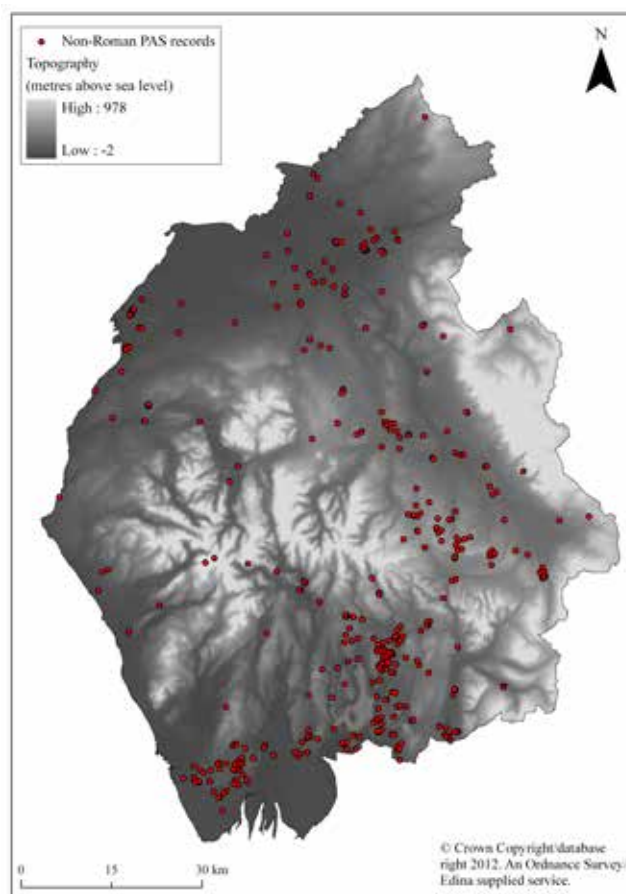


Figure 80 Distribution of non-Roman PAS records in Cumbria

very poorly represented by PAS data of all periods. The dearth of data from these areas may reflect a historical tendency for permanent settlement to favour the more hospitable areas of lower terrain, though one might expect there to have been seasonal exploitation of the uplands through transhumance. The distribution of PAS data is also likely to reflect the physical constraints on metal detecting imposed by rugged mountainous terrain.

Recovery constraints which may influence the distribution of the PAS data are presented in **Figure 81**. It is

Table 44 Density of PAS and HER data in the Cumbria case study's distinctive Natural Areas

Natural Area	Density of PAS finds per km ²	Natural area	Density of HER records per km ²
Solway Basin	0.574	Solway Basin	0.872
West Cumbria Coastal Plain	0.129	Border Uplands	0.577
Eden Valley	0.06	Eden Valley	0.372
Border Uplands	0.056	North Pennines	0.23
Cumbria Fells and Dales	0.045	West Cumbria Coastal Plain	0.194
North Pennines	0.011	Cumbria Fells and Dales	0.124
Yorkshire Dales	0.004	Yorkshire Dales	0.087

clear that there are additional physical constraints aside from the mountainous terrain in the Lake District and the Pennines. For example Grizedale Forest, west of Windermere, expands over a large part of the Cumbria Fells and Dales, covering an area of approximately 24.5km². Much of the Eden Valley is also wooded, as is Kershope Forest in the north of the county, limiting the land available for metal detecting in these areas.

Figure 82 presents the distribution of late Iron Age and Roman HER data in Cumbria and a systematic comparison of the distribution of PAS and HER data has been undertaken which compares regional densities using Natural England's 'Natural Areas' as units (Natural England 2009b) (**Table 44**). The HER data are considerably more widely distributed than the PAS data, particularly in the north of the county in the Border Uplands, where large numbers of records on the HER relate to military sites. However, there is a similar dearth of data available on the HER for the Cumbria Fells and Dales. The lack of evidence from both PAS and HER data from this area adds support for the idea that this part of the county was less intensively settled than other areas in the Roman period, whilst perhaps still utilized seasonally during transhumance. The general distribution of HER data is clearly biased towards Roman military sites which, as well as being more archaeologically visible and more easily recognized, have tended to attract more attention from researchers than low status rural sites.

The distribution of HER data is clearly biased towards the north and east, largely reflecting discoveries associated with

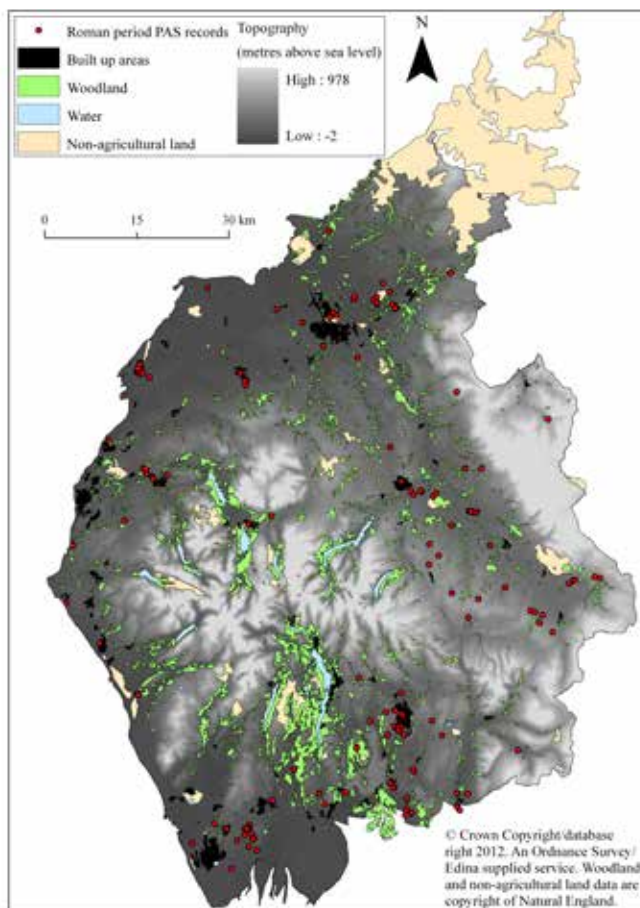


Figure 81 Distribution of Roman PAS data in Cumbria against major recovery constraints

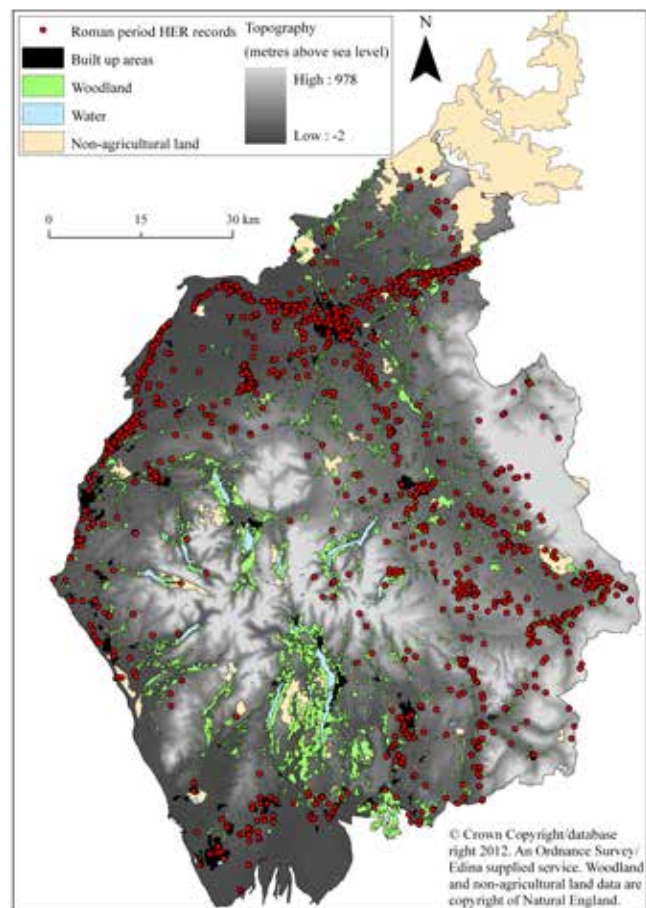


Figure 82 Distribution of individual Roman and Late Iron Age HER records in Cumbria

the military sites along Hadrian's Wall, the Stanegate 'frontier' and the Roman road network which enters Cumbria from the south east. **Figure 83** reveals a close relationship between PAS findspots and military sites recorded on the HER, and PAS finds seldom occur in areas not represented by known Roman military sites, a pattern also recognized by Collins in his recent work on PAS data from the northern frontier (Collins 2010). Kernel density analysis (see Chapter 3, p. 21) indicates that PAS data occur in large numbers at very few locations, and where significant clusters of artefacts occur they tend to be from areas surrounding forts (**Fig. 84**). However, the fact that most military sites are scheduled monuments means that PAS data tend not to occur in direct association with them, an exception being a group from Nether Denton, where a detector user was caught illegally detecting on the scheduled monument, and who was required to report his finds to the PAS and hand them over to Tullie House Museum (Dot Boughton pers. comm.). In the Furness Peninsula in the south no military sites are recorded, yet a significant cluster of PAS finds occur in the vicinity of several rural sites recorded on the HER, making this area something of an exception. **Figure 85** further illustrates the predominance of military sites on the HERs from Cumbria and all sites where there are dense clusters of data available are military. Given the clustering of PAS findspots around Roman military sites it seems quite possible that much of the PAS data in Cumbria is associated with military activity, especially as finds of metalwork are generally uncommon finds on native sites.

However, the tendency for PAS data to occur near military sites may reflect an attraction by metal detector users towards areas where they perceive they are most likely to find artefacts.

It is likely, for instance, that some metal detector users are drawn towards areas known to have been populated in the Roman period, and as the military sites in the county are often the best published it should not be considered surprising that detector use gravitates towards these areas (however see Appendix 1 for other factors influencing where detectorists choose to search). This may in fact be reinforcing a perhaps biased pattern where artefacts are not commonly found on native sites.

However, although the map shown in **Figure 83** suggests that at a broad level PAS finds occur in close proximity to known military sites, a large-scale map indicates that these findspots are often some distance from the nearest HER record as illustrated in **Figure 86**, which shows the fort at Papcastle. Here the largest cluster of PAS data in the area is hundreds of metres from the known area of the fort and *vicus*, on the opposite side of the Derwent, although viewed on a small-scale map the two would appear to occur in precisely the same location. This pattern seems to be fairly typical of the distribution of PAS finds in the region. At Papcastle it seems likely that the finds do indeed relate in some way to the military settlement, although they need not necessarily be an extension of the same 'site', particularly as they occur on the opposite bank of the river. It is worth noting that a scheduled monument recorded as a Romano-British

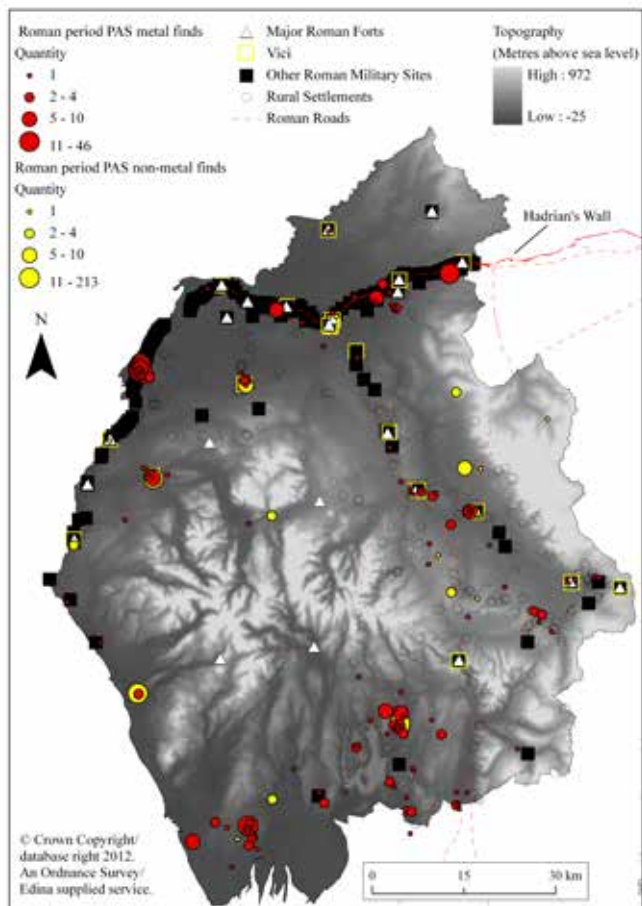


Figure 83 Quantities of individual artefacts recorded on the PAS database in relation to military and other sites recorded on Cumbria's HER

settlement (Cumbria HER reference 871) is located approximately 600m to the south west of the major PAS cluster, and it is possible that finds from the areas surrounding forts may relate to settlements that were distinct from them. Many rural settlements must have had dynamic relationships with the *vici*, supplying food and other produce and engaging with the markets at these sites.

Where finds of Romano-British metalwork occur near Roman military sites and other 'Romanized' settlements, but cannot be demonstrably associated with them, this raises an important question regarding the ancient use of these artefacts. Are such finds simply reflective of activity by the military, or can they be seen as evidence for the wider adoption of Roman material culture at 'native' sites, particularly those located in close proximity to the market centres?

Categorization of PAS findspots in Cumbria

Although there are only a few clusters with large quantities of finds from Cumbria, PAS data have been recovered from several locations and some of the groups may be significant. Using the methodology defined in Chapter 3, 136 distinct findspots were recognized (**Table 45**).

The low occurrence of finds in Cumbria necessitates a slight revision to the methodology. In previous chapters, large and medium assemblages have been taken as potential evidence for settlement. As a result of the lower numbers of metal artefacts in Cumbria, the threshold for potential site

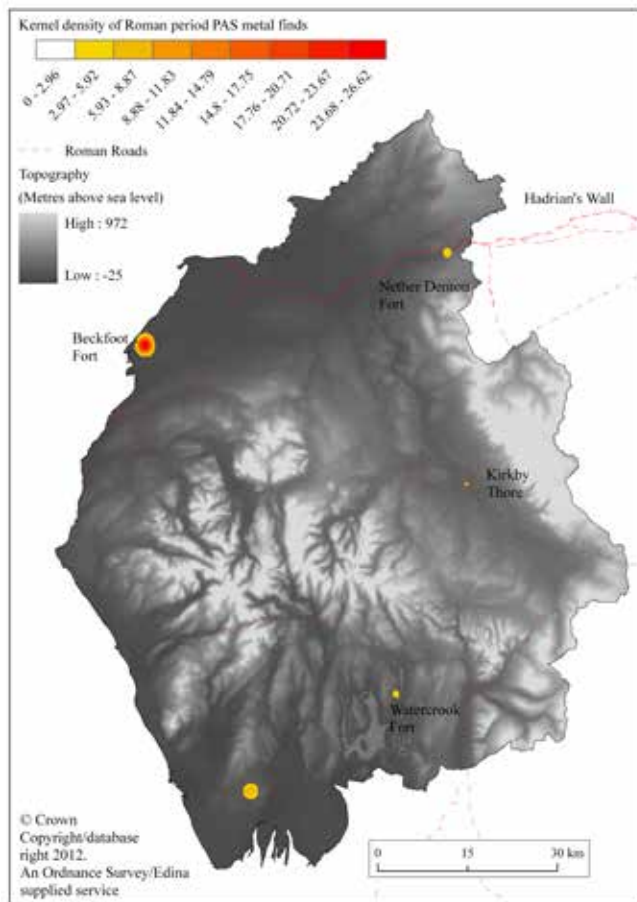


Figure 84 Kernel density plot for PAS data in Cumbria

identification has been lowered to include small assemblages. However, the criteria for each assemblage remain the same as in the other case studies. Small assemblages comprise two to four metal artefacts, medium groups five to ten, and large groups eleven or more metal objects.

Single metal objects dominate the assemblage types and the low number of findspots with large and medium assemblages is not surprising given the scarcity of finds from non-military sites in the region. Including large, medium and small groups of metalwork, there are 41 findspots that can be seen as potential evidence for settlement, and 27 (65.9 per cent) of these are 'new'. Based on comparison with the 349 sites from Cumbria on the National Monuments Record, the 27 new PAS sites represent an increase of 7.74 per cent, along with additional information for 4 per cent.

The composition of groups of PAS data from Cumbria

As in previous case studies coins are the most common type of metal find on the PAS database, accounting for 185 of the 435 metal artefacts (42.5 per cent). Only two of the coin records are pre-Roman in date, although this is unsurprising given that the county is not known to have been within the territory of coin-using tribes (Hartley and Fitts 1988, 11). One of these (LANCUM-oCoFE6) is actually a Ptolemaic coin from Egypt, and its loss in antiquity must be questioned, as it is possible that it was collected and lost recently. The other (LANCUM-2E7562) is not of ancient British origin

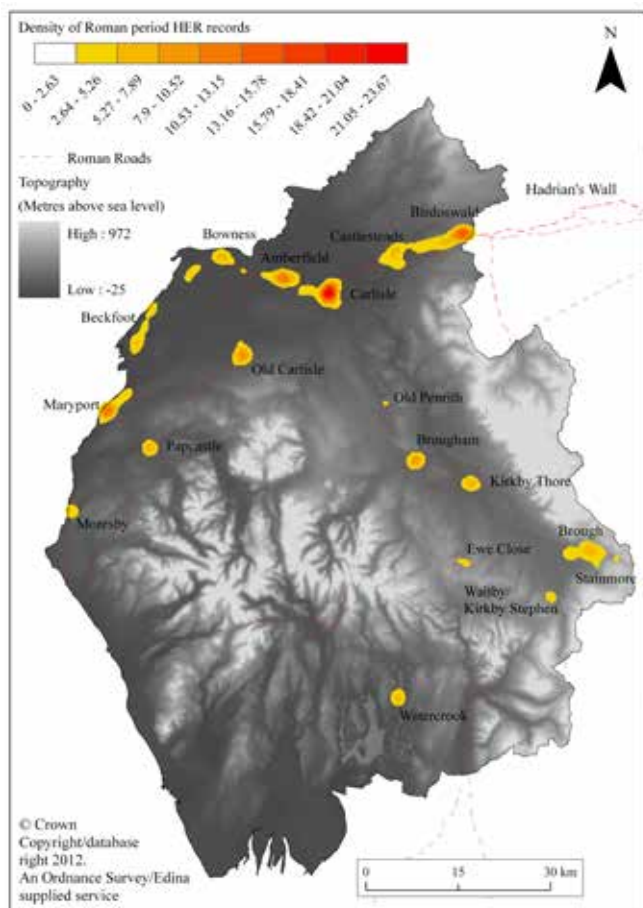


Figure 85 Kernel density plot for HER data in Cumbria with associated forts listed

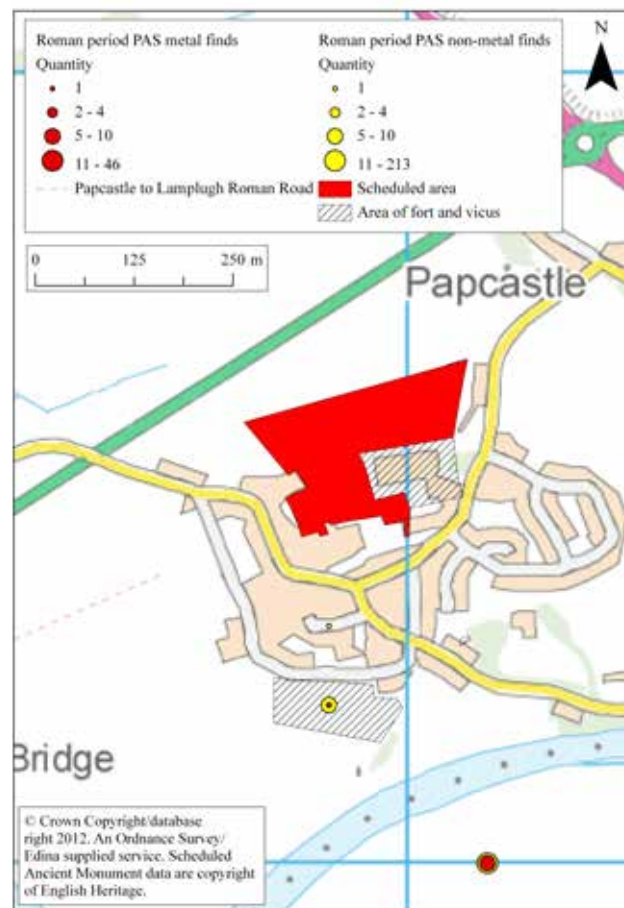


Figure 86 PAS finds in Papscastle and Cockermouth, in relation to the Roman fort and *vicus*

either, and the PAS record suggests that it may in fact be a modern copy of an ancient Greek coin.

Whilst coins represent the most common metal artefact discovered, they do not dominate the groups in the same way as in previous case studies, even with the exclusion of non-metal finds. This may in part relate to unusually high numbers of artefacts such as nails recorded from Cumbria. There are, for example, 62 individual hobnails recorded on the database, mostly from the Beckfoot fort area (see below).

The chronological pattern displayed by coinage in Cumbria differs significantly to those from the other case studies, and the late 3rd- to 4th-century AD coins that dominate the database in other counties are evident in much smaller numbers, driving down the relative dominance of coinage in general in the Cumbrian assemblages. The low number of late 4th-century AD coins presumably reflects a general lack of coin use in Cumbria's Romano-British rural settlements, the type of sites that seem to have been responsible for so much late Roman coinage at findspots in southern counties. Why many of these sites should produce early but not late Roman finds is not immediately clear. Little evidence exists to suggest that rural sites which continued beyond the conquest in Cumbria were any more prone to early abandonment than those elsewhere in the province, though dating evidence available from ceramic assemblages has also failed to identify late Roman material at several excavated rural sites (Higham 1981; 1982; 1983). As coins are far more abundant at findspots in the other case study regions, it may be that

the relationship between low-status rural sites and the Roman army was not one which required widespread coin use. Payment of taxes and the procurement of necessities was perhaps based upon other forms of exchange, and small numbers of coins recovered from what may be 'native' settlements may reflect very low level engagement with the Roman monetary system. This is speculative, and the reliance on very small groups of finds must limit the confidence with which we can classify some of these findspots as sites at all. The possibility remains that they relate to ephemeral activity associated with the Roman army, particularly as many of these groups occur near forts.

Table 45 'New' and previously known findspots according to findspot category (discussed in Chapter 3)

Findspot type	Located at least 200m away from nearest HER record	Within 200m of HER record	Total
Single metal objects	51	23	74
Small assemblages	20	8	28
Medium assemblages	5	4	9
Large assemblages	2	2	4
Non-metal	13	8	21
Total	91	45	136

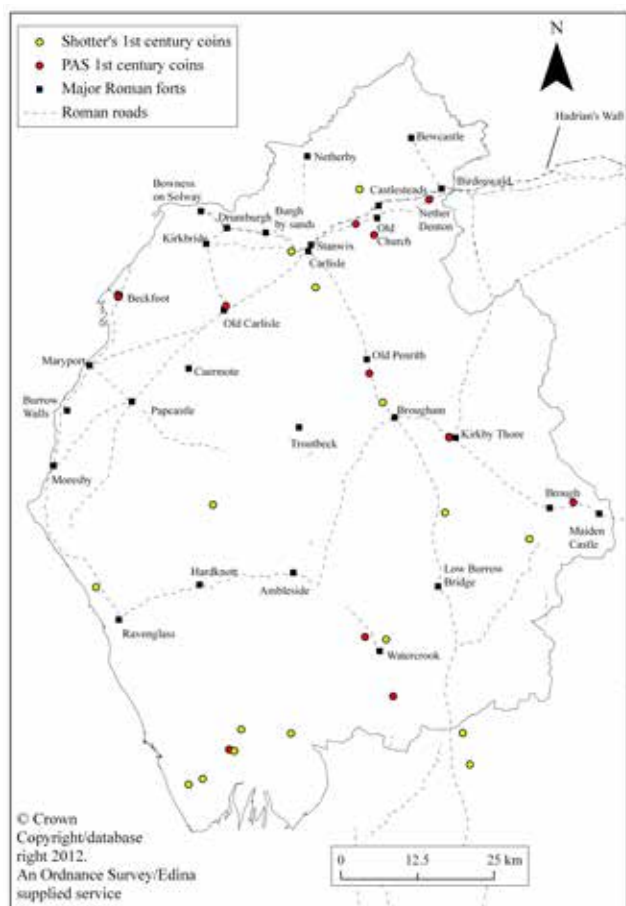


Figure 87 Distributions of 1st-century AD coins on the PAS database and those recorded by Shotter (after Shotter 1989, 47)

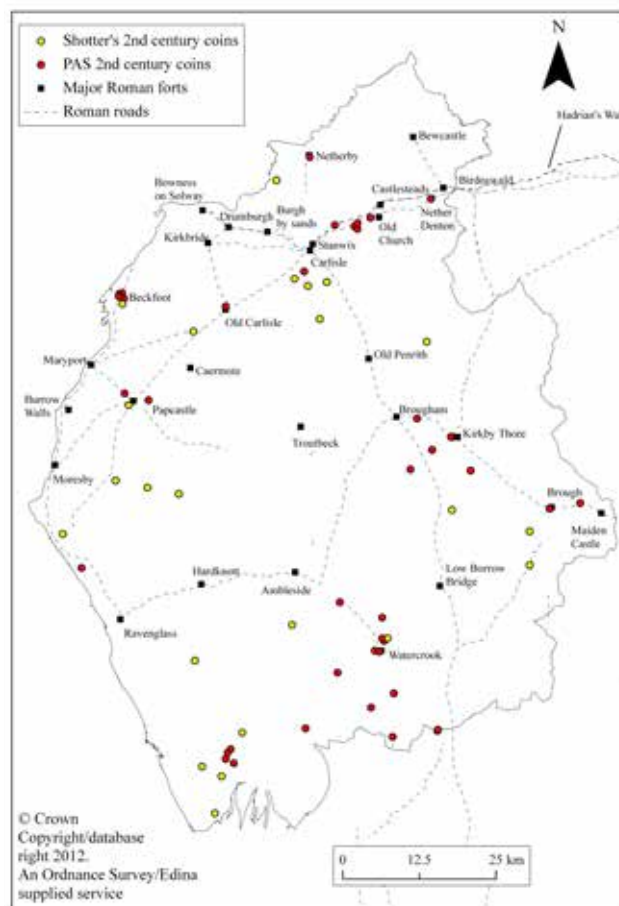


Figure 88 Distributions of 2nd-century AD coins on the PAS database and those recorded by Shotter (after Shotter 1989, 48)

The coin data recorded by the PAS provide a valuable addition to the work on the distribution of Roman coinage in Cumbria undertaken by David Shotter (Shotter 1989; 2004a; 2005). In his 1989 article Shotter addressed coin finds from locations not known to be Roman sites, dividing them by century. Although many coin finds recorded by the PAS appear to have been found within the vicinity of forts, there are also occurrences in areas where forts are unknown (**Figs 87–90**). This is most clear in **Figure 88**, which shows a number of 2nd-century AD coin finds from the south of the county, to the north and south of the fort at Watercrook, and in the Furness peninsula. This is particularly interesting given the current lack of known forts in this part of Cumbria (Shotter 1989, 44; 1995, 73). This might suggest that there are forts in this part of the county awaiting discovery, a possibility previously considered by Shotter (Shotter 1995, 73; 2004b, 61), or that the area was interacting with the monetized economy in ways which other parts of Cumbria were not. Shotter has suggested that the presence of increasing numbers of coins in the 2nd century AD may represent evidence for the ‘opening up’ of the Lake District and beyond, possibly as an area of supply to the military in the north (Shotter 1995, 76). If this were the case then finds of coins might reflect interaction between Romano-British sites and the military, perhaps in the form of a system of supply.

A particular cluster of coins occurs in the adjacent parishes of Urswick and Aldingham in the Furness Peninsula with eight coins recorded on the PAS database

from the two parishes. Most are 1st to 2nd century AD in date, although there are two late 3rd-century AD radiates. In the context of Cumbria, where, aside from at fort locations, coins are found in relatively small numbers, this may be significant and perhaps suggests some sort of occupation in the area.

Shotter records only 37 single coin finds from the whole of south Cumbria (Shotter 1995, 75–6). A number of Iron Age/Romano-British settlements are known from the two parishes and recorded on the HER, including three enclosed hut circle settlements, a palisaded hilltop enclosure, a hillfort and two farmsteads. Occasional coin finds have also been recorded on the HER. In 2003 the director of an excavation in Urswick claimed to have discovered a Roman fort in the parish (*The Westmorland Gazette* 2003), although the claims are controversial and have been disputed by a number of archaeologists from the region who have visited the site (Brennand *et al.* 2006). The additional coin finds recorded by the PAS in Urswick and Aldingham do not substantiate the claims for a military presence in Urswick, but the presence of a relatively high number of coins should make this a consideration. Alternatively, the coins could be seen as potential evidence for coin use in an area not intensively occupied by the military, contributing to the debate as to the extent of engagement in the monetized economy by the occupiers of rural sites. Certainly, the finds from Urswick and Aldingham, albeit relatively few in number, do form a cluster in an area poorly represented by military activity, and are thus perhaps of significance.

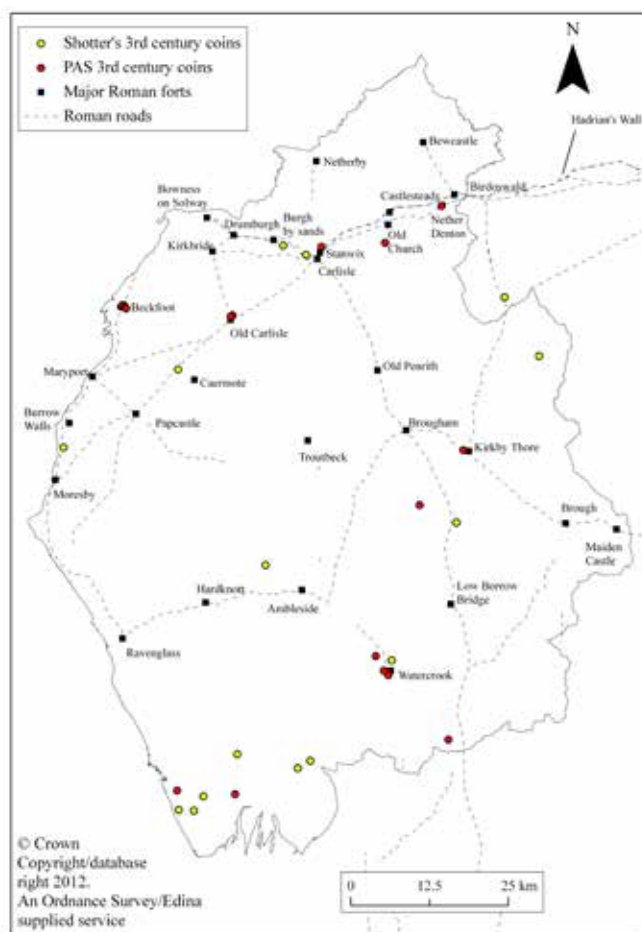


Figure 89 Distributions of 3rd-century AD coins on the PAS database and those recorded by Shotton (after Shotton 1989, 49)

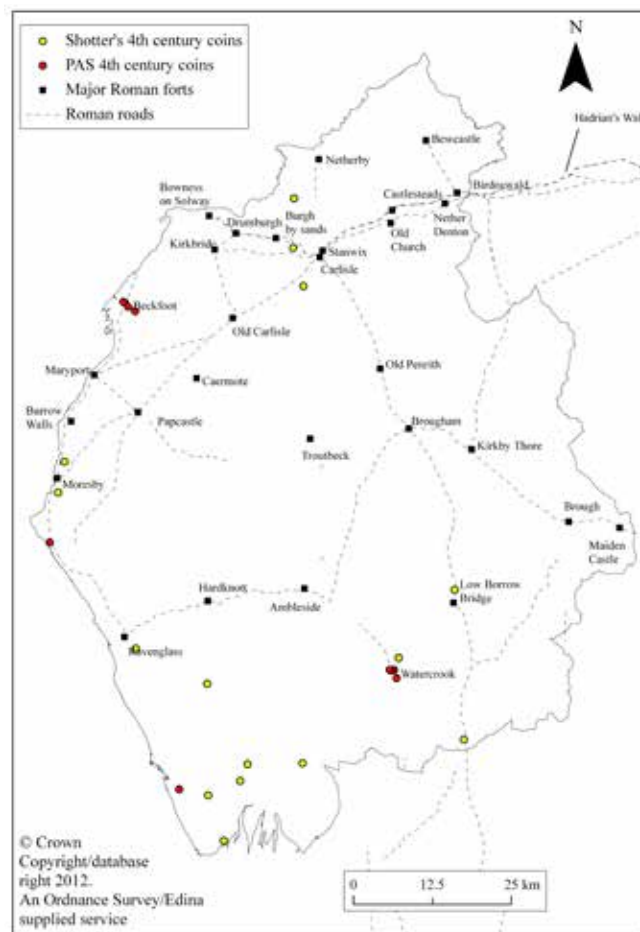


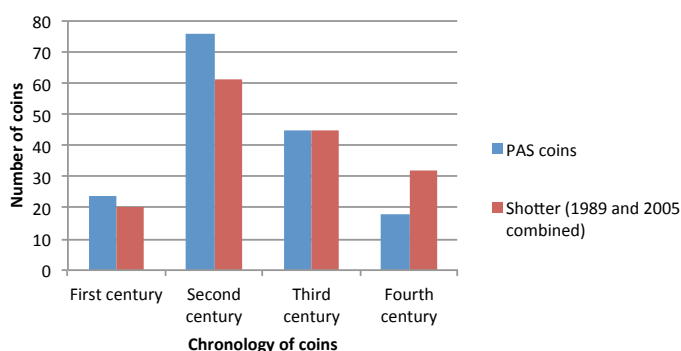
Figure 90 Distributions of 4th-century AD coins on the PAS database and those recorded by Shotton (after Shotton 1989, 50)

As noted above (p. 105), late 3rd- and 4th-century AD coins are not well represented in the Cumbrian PAS data. Late coins also occur in relatively low numbers in Shotton's reports on Cumbrian coins, though they are not as scarce as in the PAS data (**Fig. 91**). The reason for this disparity is currently unclear. It is possible that 4th-century AD coins are less likely to be reported to FLOs because of the perception by some metal detector users that they are of little interest (see the qualitative responses to the questionnaire presented in Appendix 1). However, given that late coins are uncommon finds in Cumbria this is perhaps unlikely. Shotton notes that where late Roman coins occur, they tend to be associated with forts and *vici* (Shotton 1989, 45), and it is possible that the slight difference between the PAS and Shotton lists is that coins reported to the PAS are coming from rural sites which differ from the sites that Shotton has recorded finds from. Walton has recently suggested that bronze denominations of coin may have been rejected by the native population in the north (Walton 2012, 55), and many rural sites perhaps did not engage fully in the monetary economy. The earlier silver *denarii* sometimes found on northern rural sites need not necessarily reflect full integration with the Roman monetary system, and it has been suggested that such finds may represent prestige goods, which perhaps were only used for limited, specialized transactions (Hunter 2007, cited in Walton 2012, 55).

Tables 46–8 summarize the composition of large, medium and small groups of metal work. The few large

assemblages in Cumbria appear to be overwhelmingly associated with known Roman military sites and their associated civilian settlements. Although only two of the four (50 per cent) occur within 200m of the nearest HER record, all are within 1km of a military or civilian site and may therefore relate to associated activity. Three of the large assemblages (75 per cent) are within the parish of Holme St Cuthbert, and it seems likely that they relate directly to activity associated with Beckfoot fort and *vicus* (see below). The other large assemblage related to HER data is associated directly with the fort at Nether Denton, where, as discussed earlier, the finds were recovered illegally by a metal detectorist searching on the scheduled monument, and were only reported to the PAS after he had been caught.

Figure 91 Number of coins from Cumbria on the PAS database and after Shotton (1989 and 2005)



Findspot	Coins	Dress accessories	Ceramics	Other	Total	Findspot	Coins	Dress accessories	Ceramics	Other	Total
Nether Denton	11	1	0	5	17	Aldingham 2	1	1	0	0	2
Holme St Cuthbert 9	1	3	204	42	250	Aldringham 4	2	0	0	0	2
Holme St Cuthbert 7	19	10	166	36	231	Askam and Ireleth	0	2	0	0	2
Holme St Cuthbert 2	15	0	0	0	15	Beetham	0	0	0	2	2
Total	46	14	370	83	513	Brougham 3	2	1	0	1	4
						Brougham 4	0	0	0	2	2

Table 46 Summary of assemblage composition of large PAS findspots (11 or more metal artefacts)

Findspot	Coins	Dress accessories	Ceramics	Other	Total
Holme St Cuthbert 8	1	0	14	8	23
Cockermouth 1	0	6	38	11	55
Kirkby 2	10	0	0	0	10
Kendal 3	3	0	0	3	6
Irthington 3	4	2	0	0	6
Helsington 5	5	1	0	3	9
Burgh by Sands	0	3	0	2	5
Barrow in Furness	7	0	0	0	7
Underbarrow and Bradleyfield 2	5	4	0	1	10
Total	35	16	52	28	131

Table 47 Summary of assemblage composition of medium PAS findspots (between five and ten metal artefacts)

Four out of the nine (44.4 per cent) medium assemblages are within 200m of HER records, and six (66.7 per cent) of them are located within 1km of Roman military or civilian sites. The remaining three medium assemblages (33.3 per cent) occur some kilometres from the nearest known military activity, and may perhaps be more likely to represent use of metal objects at sites not directly associated with the military occupation.

Eight of the 28 small assemblages (28.6 per cent) are located within 200m of the nearest HER record, whilst six (21.4 per cent) are within 1km of a known military site. This makes 22 small assemblages of metalwork located at least 1km from the nearest military site, perhaps suggesting that small quantities of metal artefacts were being used at non-military settlements. Of course it is difficult to demonstrate with any confidence that small numbers of artefacts represent anything more definite than casual losses, though the possibility that these finds represent the filtering of small numbers of 'Roman' artefacts to rural settlements should not be ignored.

Fifty-one of 74 single finds (68.9 per cent) are located within 200m of an HER record, whilst 29 (39.2 per cent) are

Burton in Kendal	1	1	0	0	2
Crosby Garrett	2	0	0	1	3
Crosswaite and Lyth 2	2	0	0	2	4
Hayton 1	0	2	0	0	2
Hayton 3	2	0	0	1	3
Hayton 4	0	2	0	0	2
Helsington 2	2	1	0	0	3
Holme St Cuthbert 1	2	1	0	0	3
Holme St Cuthbert 3	0	0	0	2	2
Irthington 1	0	1	0	2	3
Kendal 4	0	1	0	1	2
Kirkby Thore 1	0	2	0	1	3
Lower Alithwate	3	0	0	0	3
Minthorpe 1	2	0	0	0	2
Morland	1	0	0	1	2
Muncaster 1	0	0	19	2	21
Natland 2	1	0	0	1	2
Old Hutton and Holmescales 1	0	0	0	2	2
Urswick 7	3	0	0	0	3
Waitby 2	0	2	0	1	3
Wigton 2	2	0	0	0	2
Wigton 3	4	0	0	0	4

Table 48 Summary of assemblage composition of small PAS findspots (between two and four metal artefacts)

from within 1km of the nearest demonstrably 'Roman' site. This leaves 45 single finds that are perhaps not directly associated with the presence of the Roman military, although of course any number of these may represent casual loss by the military during movement around the county, and when dealing with single metal objects on their own it is extremely difficult to argue for anything other than casual loss, unless additional evidence exists to suggest more substantial activity. However, three finds of single metal artefacts occur within 200m of a PAS record of non-metal, and in Cumbria, where the incidence of metal artefacts is low, it is more appropriate to consider finds of non-metal artefacts than in other case study chapters, even if they cannot be argued to represent settlement.

This is exemplified by the occurrence of a single copper-alloy vessel fragment from Papcastle (see **Fig. 86**), which actually occurs in association with 10 non-metal artefacts: a quern stone, two glass beads, two ceramic sherds, a bone pin, a figurine of pipe clay and three whetstones. This assemblage is certainly sufficient to suggest some sort of settlement activity, yet had the metal artefact been considered in isolation it may well have been dismissed as a casual loss. These finds are from an unscheduled part of the *vicus* at Papcastle and finds from this area are already recorded on the HER, so it is likely that in this instance the finds are directly associated with the fort and *vicus*.

Further examples of single metal finds associated with non-metal objects include finds from near the fort at Carlisle, where a coin was recovered along with a number of pottery sherds, and from near Watercrock fort at Kendal, where a single coin was found along with a ceramic sherd. It is notable that the only incidences of single finds occurring alongside finds of non-metalwork on the PAS database all occur within the immediate vicinity of forts.

Generally speaking, non-metal artefacts on the PAS database are recovered from the same areas as metal artefacts. Of 567 non-metal artefacts 191 (33.7 per cent) were recovered from a distance greater than 200m from the nearest find of metalwork. The majority of non-metal finds are vessel sherds, although small numbers of objects of other types are recorded (**Table 49**). Where non-metal finds are recovered in isolation they tend to be individual or small groups of vessel sherds. Very large quantities of non-metal finds tend to occur in areas well known to archaeology, as at Holme St Cuthbert (the site of the Beckfoot fort and cemetery), and in areas where metal artefacts have also been recovered. Based upon the PAS evidence, there do not appear to be significant areas where ceramics are present and metal artefacts are not, although since the primary finders of PAS data are metal detector users this is not surprising.

Object type	Quantity on PAS database
Ceramic vessel	509
Ceramic architectural fragment	17
Ceramic weight	6
Ceramic figurine	2
Ceramic gaming board	1
Glass vessel	5
Glass or faience dress accessory	3
Stone whetstone	3
Stone weight	3
Stone quern	11
Stone sculpture	1
Stone altar	2
Stone vessel	1
Bone or ivory dress accessory	3
Total	567

Table 49 Type and number of non-metal artefacts recorded on the PAS database from Cumbria

Localized case study: Watercrock fort

This case study focuses on an area of approximately 3km² around the fort at Watercrock, incorporating parts of three parishes, Kendal, Helsington and Natland (**Fig. 92**). Watercrock fort is situated in a low-lying area, in a loop formed by the River Kent, immediately south of Kendal, one of a number of forts built to control the Lake District (Potter 1976, 31; Potter 1979, 139). The fort is represented by earthworks and has seen partial excavation (Potter 1976; Potter 1979). It is thought to have been established in earth and timber between AD 90–5, rebuilt in stone in the first half of the 2nd century AD and continued in use until the 4th century AD, though perhaps with a reduced garrison in the later period (Potter 1979, 180–4). Excavation revealed part of the *vicus* to the north and east of the fort. The east part of the

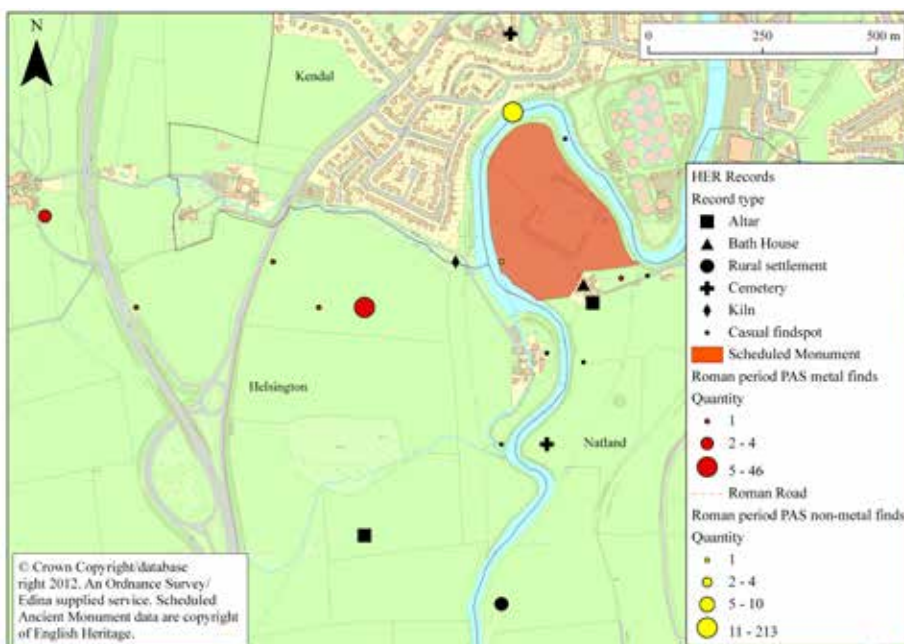


Figure 92 Distribution of PAS and HER records in the environs of the Watercrock fort

'Site'	PAS ID	Artefact	Date from	Date to
Helsington 5	LVPL2387	Sealbox	AD 100	AD 300
Helsington 5	LANCUM-36CD65	Key	AD 50	AD 200
Helsington 5	LANCUM-370D52	Key	AD 50	AD 200
Helsington 5	LANCUM-88C3E4	Coin	AD 321	AD 322
Helsington 5	LANCUM-88E1D6	Coin	AD 145	AD 161
Helsington 5	LANCUM-88F722	Coin	AD 169	AD 169
Helsington 5	LANCUM-EDD181	Brooch	AD 100	AD 200
Helsington 5	LANCUM-E58F62	Coin	AD 337	AD 341
Helsington 5	LANCUM-88A742	Coin	AD 195	AD 196
Helsington 2	LANCUM-C001A7	Buckle	AD 200	AD 400
Helsington 2	LANCUM-BFE642	Coin	AD 222	AD 235
Helsington 2	LANCUM-6D17D7	Coin	AD 114	AD 117

Table 50 Composition and chronology of PAS finds from Helsington 5 and Helsington 2

vicus seems to have been established at the same time as the initial fort and abandoned in the early 3rd century AD (Potter 1979, 185). The north area produced evidence for occupation between the late 2nd and late 3rd centuries AD.

A number of other sites are recorded on the HER from the surrounding area, including a bath house (Collingwood 1908, 105), two small groups of cremation burials (Cowper 1892; Collingwood 1908, 107), two separate altar finds (Collingwood and Wright 1965, 253–4) as well as a tile or pottery kiln (Birley 1957, 15–16; Potter 1979, 143). South of the fort a possible Romano-British settlement has been identified through aerial photography, although very little information is available. None of these sites have been investigated recently.

A medium group of nine PAS finds (Helsington 5) were reported from a field on the west bank of the River Kent, on the opposite side of the river from the fort, and a further small group were recovered from approximately 500m west (Helsington 2).

Two other single finds, a spindle whorl (LANCUM-EDA10) and a coin (LANCUM-E558785), are also recorded, along with a single ceramic sherd (LANCUM-ECFE82) 'washed out of the riverbank of the scheduled monument', as well as a large group of Roman earthenware recovered from the north bank of the Kent (LANCUM-2D7F46). All finds were provided with six figure grid references except the group of ceramics, which have ten figure grid references.

Other groups of Roman material are recorded on the PAS database from elsewhere in Kendal and in the adjacent parish of Underbarrow and Bradleyfield, although as they have been provided with only vague provenances they have not been included in this analysis.

The three finds from Helsington 2 (**Table 50**) are difficult to interpret with any confidence, though if they do represent a 'site' they may suggest settlement from the 2nd century AD onwards. At a distance of over 1km from the fort, the finds are perhaps evidence of Roman artefacts being used on a rural site, although it is also possible that they represent military activity in the wider landscape of the fort. Given the proximity of the Watercrock fort and *vicus*, it seems likely that the finds from Helsington 5 represent activity associated with the site. Potter's excavations revealed extramural settlement immediately north east and north of the fort, between the fort and river (Potter 1979). Potter was able to demonstrate that the north-eastern part of the *vicus* saw activity between the late Flavian period and the early 3rd century AD, when it was abandoned (Potter 1979, 185). The north part of the *vicus* apparently saw activity until the late 3rd century AD, although a lack of finds has been taken as possible evidence for the housing of animals as opposed to domestic occupation (Potter 1979, 183). The coins and brooch find from the PAS findspot suggest that activity here was contemporary with that at the fort, and the two 4th-century AD coins suggest possible continuity into the 4th century AD. It is notable that Helsington 5 produced no finds demonstrably earlier than the mid 1st century AD, the earliest being a *dupondius* or *as* of Antoninus Pius (LANCUM-88E1D6). It is tempting to see Helsington 5 as representative of a phase of expansion of the *vicus* in the 2nd century AD, and certainly evidence from other *vici* suggest that they developed and expanded over time (Sommer 2006, 104). However, Flavian coins were not well represented in the excavation assemblage from the fort or *vicus* either (Shotter 1979, 295), and so it would be very dangerous to rely upon the chronological information provided from such a small number of coins to argue for a definite 2nd-century AD date for establishment of settlement here. From a little over 200m to the east of the PAS findspot, also on the western bank of the river, a Roman tile or pottery kiln was discovered (Birley 1957, 15–16). Perhaps over time the western bank of the river was set aside as an area of hazardous industry, deliberately sited on the other side of the river, though in the absence of further evidence this remains very speculative. Although it is difficult to interpret findspots on the basis of fairly small numbers of artefacts, the finds from Helsington 5 show how PAS data may have potential to contribute to the understanding of the extent and chronological development of *vici* associated with forts. However, larger groups of finds are needed if interpretations are to be made with more confidence.

The Beckfoot fort and cemetery

A number of Roman sites are recorded from Holme St Cuthbert, a parish on the west coast of Cumbria in the Solway Plain. Several mile fortlets are known from the parish, although the locations of many of these are conjectural, the archaeology having been destroyed by erosion. The most prominent site is *Bibra* fort and *vicus*, known from 19th-century excavations (Robinson 1881), along with more recent surveys into the fort and adjoining defences (Healey 2007). The cemetery associated with the fort has also seen recent discussion, a result of the

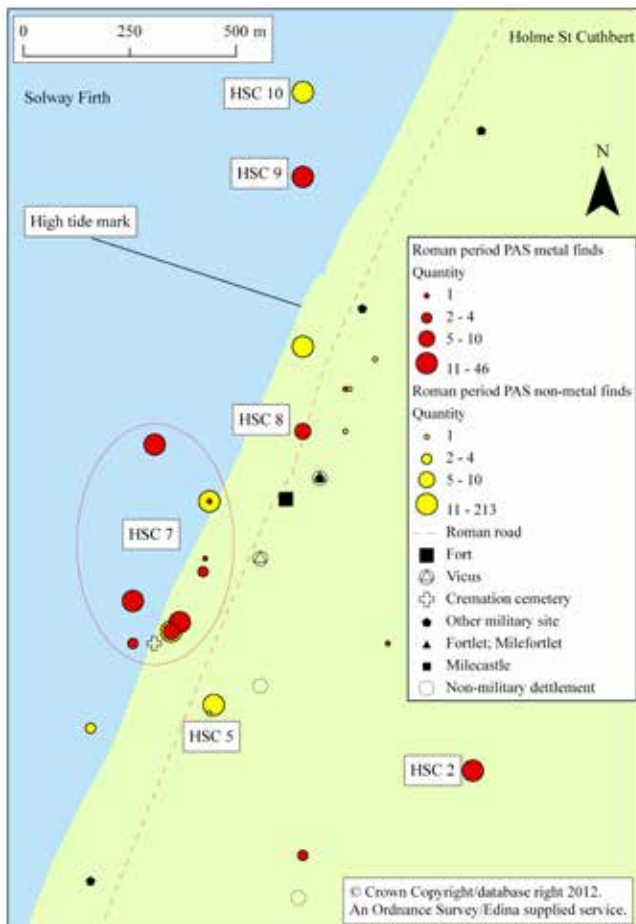


Figure 93 Distribution of PAS and HER data in Holme St Cuthbert

incremental reporting of finds from the area to Tullie House Museum throughout the 20th century (Caruana 2004, 134). However, this report does not include finds reported by amateur metal detector users, and anecdotal evidence suggests that many archaeologists and metal detector users do not have a good relationship in Cumbria (Dot Boughton pers. comm.). Caruana reports that investigation of the beach below the cemetery with a metal detector by a colleague yielded no results, and that a further colleague found a single coin and a brooch (2004, 134). It seems that the material recorded on the PAS database could therefore provide significant additional information to that reported on by Caruana.

Holme St Cuthbert is well represented by PAS data (**Fig. 93**), and 565 of the 1,001 finds on the PAS database are from this parish, 56.4 per cent of all PAS finds from Cumbria. This figure is overwhelmingly made up by finds of non-metal, with 430 non-metal artefacts recorded on the database (this figure excludes 107 fragments of human bone reported to the PAS). The non-metal finds from Holme St Cuthbert account for 75.8 per cent of all non-metal finds on the PAS database from Cumbria. Metalwork is also well represented in the parish, and the 135 finds represent 31.1 per cent of the county's total. There are ten distinct findspots in the parish (**Table 51**).

The finds were recovered by nine individuals, although two finders were considerably more prolific than the others, with one responsible for 451 (79.8 per cent) finds, the other for 89 (15.8 per cent), both through unsystematic

Findspot	Findspot Coins type		Dress accessories	Ceramics	Other	Total
Holme St Cuthbert 1	Small group	2	1	0	0	3
Holme St Cuthbert 2	Large group	15	0	0	0	15
Holme St Cuthbert 3	Small group	0	0	0	2	2
Holme st Cuthbert 4	Single find	1	0	0	0	1
Holme St Cuthbert 5	Non-metal	0	0	26	0	26
Holme St Cuthbert 6	Non-metal	0	0	4	0	4
Holme St Cuthbert 7	Large group	19	10	166	36	231
Holme St Cuthbert 8	Medium group	1	0	14	8	23
Holme St Cuthbert 9	Large group	1	3	204	42	250
Holme St Cuthbert 10	Non-metal	0	0	10	0	10
Total		39	14	424	88	565

Table 51 Composition of PAS findspots in Holme St Cuthbert

beachcombing and metal detecting. One further metal detector user was responsible for 20 (3.5 per cent) of the finds, whilst the remaining finders recovered very small numbers, chiefly through metal detection. The two most prolific finders recorded the majority of their finds to eight or ten figure grid references, whilst the other finders reported their finds to six figures. The locational data for the finds from the parish is therefore very good.

However, there is some confusion on the PAS database, as almost all of the finds are recorded as being from Maryport parish rather than Holme St Cuthbert. However, notes made by the FLO indicate that in many cases the finds were from the area of Beckfoot cemetery, indicating that the grid references are correct but the parish name is wrong. The PAS finds from Holme St Cuthbert differ from other case studies in that they were predominantly recovered from an approximate 2km stretch of beach as opposed to agricultural land. Their presence on the beach is likely to be a result of erosion (Caruana 2004, 134; Clare 2004, 45), and the site of their recovery must therefore be slightly outside that of their original position. The possibility of movement as a result of tidal action should also be considered, and perhaps the finds should be seen as one continuous scatter rather than as a series of distinct findspots. Closer consideration of the assemblages also suggests that the finds were not necessarily as widely scattered as the grid references provided on the PAS database suggest.

For example, the northernmost assemblage, Holme St Cuthbert 10, occurs at a grid reference approximately 1,200m to the north of the area of the Beckfoot cemetery, and some distance from many of the PAS finds recorded as being associated with the cemetery (**Fig. 93**). However, the recovery of large quantities of burnt human bone from this

Period (AD)	Shotter's coins from Beckfoot fort	Shotter's coins from between Beckfoot and Maryport	PAS coinage
I (AD 41)	2	0	0
II (41–54)	0	0	0
III (54–69)	1	0	1
IV (69–96)	2	1	2
V (96–117)	3	2	5
VI (117–38)	1	5	4
VII (138–61)	0	6	2
VIII (161–80)	0	4	1
IX (180–92)	0	0	0
X (192–222)	2	0	1
XI (222–35)	1	0	0
XII (235–59)	1	0	0
XIII (259–75)	2	0	2
XIV (275–94)	1	0	1
XV (294–324)	0	0	0
XVI (324–30)	0	0	0
XVII (330–46)	2	0	0
XVIII (346–64)	1	0	0
XIX (364–78)	0	0	1
XX (378–88)	0	0	0
XXI (388–)	0	0	0
Illegible	0	8	1
Total	19	26	21

Table 52 Comparison of coins recorded by PAS with those described by Shotter from the Beckfoot fort and the Cumbria coast. These coin periods reflect Shotter's arrangement of coin periods, which differ very slightly from Reece's. They have been retained here instead of Reece periods in order to compare the PAS coins directly with those recorded by Shotter

findspot indicates that the finds may be derived from cremation burials. Many of the other metal and non-metal artefacts show evidence of having been burned, and it seems highly likely that this assemblage of material is primarily made up of material from a cremation cemetery. As it seems unlikely that a cremation cemetery would extend over an area of over 1km a number of possibilities exist to explain the presence of the material at this location, so far away from many of the other finds associated with the excavation. Firstly, it is possible that the grid reference is wrong, and the finds were actually recovered from a spot closer to the known area of the cemetery. This seems to be the most likely explanation. A second possibility is that the finds may have been redistributed through tidal action, although the recovery of highly fragile fragments of burnt human bone makes this very unlikely. A third explanation might be that the findspot actually represents a second cremation cemetery, perhaps associated with Mile Fortlet 14, the nearest known site recorded on the HER. The only way of

determining which of these suggestions is most likely is through discussion with the finder, something that has not been possible in this instance.

The medium group, Holme St Cuthbert 8, is distributed between 100 and 250m north of Beckfoot fort. Burnt human bone was also recovered from this location, and the metal finds are dominated by hobnails with a single coin find. It seems likely that these finds also relate to the cremation cemetery.

The PAS assemblage situated closest to the known site of the cemetery, Holme St Cuthbert 7, includes 60 metal finds and 171 non-metal items, predominantly pottery. The metal finds include 17 nails and 10 unidentified objects. Notes on the PAS database for the unidentified objects explain that they have not been recognized because they have been badly affected by burning and melting, once again indicating that they relate to the cremation cemetery. Some of the identified objects are brooches, including a 1st-century AD Hod Hill brooch (LANCUM-293FA6) and a 3rd-century AD p-shaped brooch (LANCUM-28FE82), though others have been too badly damaged by fire to allow detailed identification, suggesting that they were also from cremation burials.

Shotter has argued that Roman coins from the Cumberland coast can be used to date the establishment and development of forts in the area. At Maryport, for example, he argues that relatively large numbers of Flavian and Nervo-Trajanic coins suggest a late Flavian or Trajanic foundation (Shotter 2004a, 197). Beckfoot, although based on a significantly smaller sample of 19 coins exhibits similar characteristics (Shotter 2004a, 197).

A further 23 coins are recorded with no provenance other than 'coastal locations between Beckfoot and Maryport', a distance of approximately 12km (Shotter 2004a, 199). Shotter suggests that Beckfoot was also likely to have been occupied during the Hadrianic period, based upon Hadrianic and/or residual earlier coins, but suggests that relatively depressed showings of Hadrianic coins may suggest a reduction in the size of the garrison (Shotter 2004a, 197). This suggestion carries more weight at sites such as Maryport and Lancaster, where the coin samples are much larger.

There are 41 Roman coins recorded from within 1km of the Beckfoot fort on the PAS database, and no other parish in the county is as well represented. Although these finds often occur in the same area as finds presumably associated with cremation burials, the coins generally do not show evidence of having been melted, so should perhaps rather be considered as casual losses (although it is possible that some may have been included as grave goods, rather than pyre deposits). This is with the exception of 16 coins from a late 3rd-century AD coin hoard, recovered approximately 800m south east of the fort (Holme St Cuthbert 2). A further four coins are recorded as being from the area, but without grid references. Excluding the coins from the hoard, and those without a satisfactory provenance, this leaves 21 coins in the sample.

Although not demonstrably associated with the fort directly, the coins provide valuable additional dating evidence for activity in the area, particularly as coin finds from the fort itself number only 19 (Shotter 2004a, 196). Given that most of the PAS coins were found in the

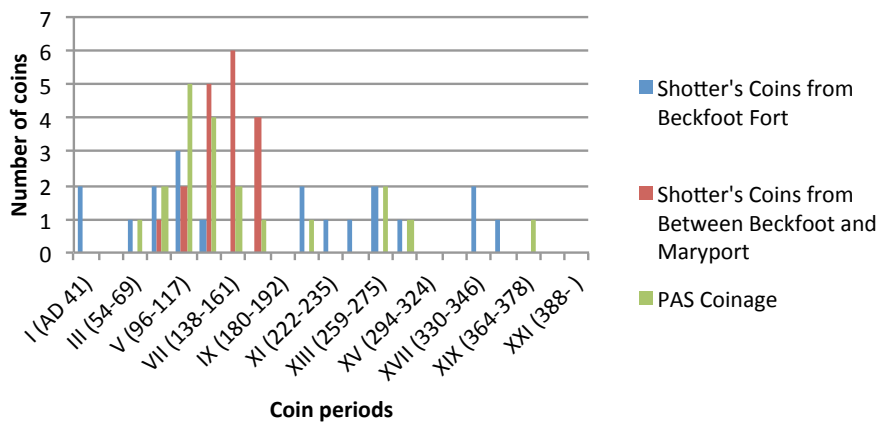


Figure 94 Chart comparing Shotter and PAS coin lists

‘cemetery’ area of Beckfoot, they are considered here as likely to relate to activity at the fort.

As the actual numbers of coins recorded by Shotter and those from the PAS database from Beckfoot are comparable, there has been no need in this instance to display the coinage as *per mils* as advocated by Reece (Reece 1995), and the coins are displayed in **Table 52** and **Figure 94** as actual numbers. The PAS coinage recorded from the Beckfoot area complements Shotter’s argument for a late Flavian or Trajanic foundation, doubling his 9 examples of coins of the Trajanic period or earlier to 19. However, the four PAS coins of Hadrianic date perhaps suggest that Shotter’s relative depression in Hadrianic coins from the fort is chance rather than indicative of a reduction in garrison size, although fluctuation in troop numbers at forts in the area is to be expected at different points in their histories.

Shotter also comments that relatively low numbers of mid 3rd-century AD coins (period XIII) at Beckfoot are possibly suggestive of reduced occupation. The norm for coins of this date is cited as being between 20 and 35 per cent of the total coin assemblage, whereas only 10.53 per cent (two coins) of the recorded coins from Beckfoot are of period XIII (Shotter 2004a, 197). The PAS coinage from the Beckfoot area produces a similar pattern, and only two of the 21 coins (9.52 per cent) are of period XIII. This reinforces Shotter’s suggestion that the fort saw less coin loss than is to be expected in the mid 3rd century AD, so perhaps did see a reduction in occupation. It is acknowledged that the coins on the PAS database cannot be seen as inextricably linked to the fort, and that even taken together the two assemblages form a small dataset on which to base such hypotheses. Nonetheless, it is encouraging that, with the exception of the greater number of coinage of Hadrianic date, the proportions of coinage are comparable to those presented by Shotter from Beckfoot.

Conclusion

This chapter has explored the extent to which PAS data can enhance understanding of the Roman period in an area with a very different character to the other regional case studies. It has shown how the data are much less abundant than in the other case studies, and finds are often recovered from locations in close proximity to Roman forts. The distribution of data can largely be explained by patterns of land use and the nature of the terrain in Cumbria, which restricts metal detecting in many areas. However, the low numbers of artefacts and the uneven distribution should also be seen in the context of ancient patterns of artefact use, and it seems likely that the dearth of PAS data available from Cumbria also reflects genuine differences in the use of material culture at non-military sites between this case study area and the other regional studies. Inevitably, the lower quantity of data available from this region has resulted in a study which has seen a less obvious contribution to the understanding of Romano-British settlement than in the previous chapters. Yet the study has produced some useful results. It has been possible to suggest that PAS data in Cumbria may relate to 41 individual sites, 27 (65.9 per cent) of which are ‘new’, an increase of 7.74 per cent to the number recorded on the National Monuments Record. Few ‘sites’ produced enough artefacts to allow detailed interpretation, but the case studies which focused on the areas surrounding the forts at Watercrock and Beckfoot showed how PAS data can contribute to areas that have already seen some archaeological investigation. At Watercrock it was possible to suggest, if very tentatively, a possible area for expansion of the *vicus*, on the opposite bank of the river to the fort. At Beckfoot, it was possible to argue that the finds represented further evidence for the known cemetery near the fort, and to add chronological support for Shotter’s discussion of the history of occupation at the forts at Beckfoot and Maryport.

Chapter 9

Comparison and Conclusions

Introduction

The principal aim of this study has been to evaluate the potential for PAS data for enhancing understanding of Romano-British landscapes, and the extent to which they can be used to help date and characterize Roman settlements. Five individual case study regions were selected to provide several different contexts for the research: Wiltshire, Worcestershire and Warwickshire (as a single case study), Northamptonshire, North Lincolnshire and North East Lincolnshire (as a single case study) and Cumbria. This chapter amalgamates, compares and discusses the results of the analyses undertaken in each of these regions.

In each case study analysis comprised two elements: a broad regional overview and two localized case studies. The general distribution of PAS data was explored, considering the impact of geographical and historical factors on these distributions. The distribution of PAS data was also compared with the distribution of Roman period data held by the relevant Historic Environment Records (HERs). The next section in this chapter compares these general distributions, considering how factors such as regional variation in geographical features, contemporary land use, detecting practice and variation in the historic settlement pattern affect the availability and quality of the data.

Each regional case study applied a methodology (as presented in Chapter 3) for interpreting groups of PAS data which attempted to differentiate between 'off-site' activity and potential sites. Consideration is then given to the impact that PAS data have on our understanding of Romano-British settlement in the case study regions with reference to the statistics generated by this methodological approach, and by comparing the numbers of 'sites' represented by PAS data with those recorded on the National Monuments Record (NMR). Regional patterns in the composition of artefact groups recorded by the PAS and the potential that interpretation of these has for characterizing sites is consequently examined. A consideration is then given to the ways in which interpretation of PAS findspots can contribute to some broad research questions in the study of Roman Britain (discussed in Chapter 2), particularly population, site characterization, chronology and the relationship between non-villa rural sites and towns and villas. This is done with reference to the detailed, localized case studies from each region. The chapter concludes with a summary of the results and reflects upon the methodology used, commenting on some of its limitations and suggesting ways in which it might be revised and developed in the future.

The general distribution of Roman PAS data in five regional case studies

In each regional case study PAS data were plotted using GIS, alongside geographical features that might influence their distribution, including urban areas, woodland and terrain. In order to explore the extent to which PAS data can contribute to known Romano-British settlement patterns, Roman period data held by the relevant HERs were also plotted. Comparison of the two types of data was done informally, by 'eyeballing' the distributions of the two datasets, and more formally by quantifying them in relation to Natural England's distinctive 'Natural Areas' (Natural

Natural Area	Density of PAS finds per km ²	Natural Area	Density of HER records per km ²	Natural Area	Density of PAS finds per km ²	Natural Area	Density of HER records per km ²
Cotswolds	1.92	Midvale Ridge	1.95	Cotswolds	5.43	Severn and Avon Vales	1.56
Thames and Avon Vale	1.71	Marlborough Downs	1.09	Midland Clay Pastures	3.46	Cotswolds	0.76
South Wessex Downs	1.52	Thames and Avon Vale	0.74	Severn and Avon Vales	2.18	Midlands Plateau	0.68
Marlborough Downs	0.86	South Wessex Downs	0.57	Midlands Plateau	1.11	Trent Valley and Rises	0.67
Midvale Ridge	0.59	Cotswolds	0.45	Malvern Hills and Teme Valley	0.66	Midland Clay Pastures	0.61
Wessex Vales	0.16	Hampshire Downs	0.24	Trent Valley and Rises	0.26	Malvern Hills and Teme Valley	0.3
New Forest	0.03	Wessex Vales	0.19	Central Herefordshire	0	Central Herefordshire	0.19
Hampshire Downs	0	New Forest	0.05				

Table 53 Density of PAS and HER data in Wiltshire's distinctive Natural Areas

England 2009b) (for a fuller explanation see Chapter 3, p. 21). In every regional case study the distribution of HER data was wider than that of the PAS data. This is not surprising, as HERs hold information amalgamated from many sources, including evidence from archaeological excavations, field survey, aerial photography and casual finds accumulated over many decades. HERs therefore often hold data from areas from where PAS data are not widely available, most notably from built-up areas where development-led archaeology has been focused, but often also from other areas where there are constraints on detecting. On Salisbury Plain in Wiltshire, for example, ownership by the Ministry of Defence restricts detecting across a wide area (Chapter 4, p. 32). In Cumbria the mountainous terrain of much of the Lake District makes conditions unsuitable for searching by metal detector users (Chapter 8, pp. 101–2). Large expanses of woodland also affect the distribution of PAS data: in Worcestershire, for example, the Wyre Forest in the north west of the county is very poorly represented by PAS data (Chapter 5, pp. 51–3), a pattern repeated at Rockingham Forest in north-east Northamptonshire (Chapter 6, pp. 70–3).

Whilst physical constraints on detecting appear to be the predominant factor influencing the general distribution of the data, there are others. In some areas it is possible to suggest that imbalanced distributions reflect differences in the ancient settlement pattern. In North Lincolnshire the distribution of Roman PAS data is clearly associated with the highest terrain, and the lower-lying river valleys, flood plains, marshes and coastal areas are poorly represented (Chapter 7, pp. 89–91). The availability of good quality arable land in low-lying areas, the sort of land on which most metal detector users search, suggests that this dearth of material may reflect lower levels of Romano-British settlement. This may be a result of the tendency for these areas to flood, and the absence of PAS data from other periods, as well as the distribution of modern settlement, suggests that the lower terrain has tended to be avoided for permanent settlement in the past.

Table 54 Density of PAS and HER data in Worcestershire and Warwickshire's distinctive Natural Areas

Elsewhere, it can sometimes be difficult to identify whether uneven regional distributions reflect ancient settlement patterns or contemporary recovery biases, and sometimes there may be a combination of these factors. In Worcestershire and Warwickshire, for example, the latter is significantly better represented by PAS data than the former. This may reflect a greater proportion of arable land available for searching in Warwickshire. Furthermore, the relationship between archaeologists and metal detectorists has historically been much better in Warwickshire than Worcestershire, and this is likely to have some effect on the numbers of individuals who report their discoveries to the PAS. However, there also appears to be a different Romano-British settlement pattern in north and west Worcestershire, where individual ditched enclosures are the dominant settlement type and where villas or market centres are not widely known, whereas the rest of the case study is characterized by a complex pattern of different settlement types where both towns and villas are represented. It is possible, therefore, that alongside contemporary recovery biases, lower quantities of PAS data in this part of the case study area represent social, cultural or economic differences in the use of material culture by people who inhabited different types of site. Even after consideration of constraints on metal detecting, it is important to be aware that areas which produce low numbers of finds do not necessarily equate to unpopulated areas in the Roman period.

The difficulty of distinguishing between patterns that reflect modern recovery constraints and ancient settlement is further emphasized by the distribution of PAS data in Cumbria. It seems fairly obvious from the distribution pattern, which is clearly biased towards the fertile land of the Solway Plain and South Lakeland, that it is the rugged terrain in the Lake District which is responsible for the lack of PAS data from the centre of the region. This part of the county is also poorly represented by HER data, suggesting that the area may genuinely have been less intensively settled than elsewhere in the county, although it was probably

Natural Area	Density of PAS finds per km ²	Natural Area	Density of HER records per km ²	Natural Area	Density of PAS finds per km ²	Natural Area	Density of HER records per km ²
Yardley Whittlewood Ridge	3.97	West Anglian Plain	10.71	North Lincolnshire Coversands and Clays	2.44	North Lincolnshire Coversands and Clays	1.25
West Anglian Plain	2	Yardley Whittlewood Ridge	7.61	Lincolnshire Wolds	1.3	Humber Estuary	0.92
Midland Clay Pastures	1.72	Rockingham Forest	6.72	Humber Estuary	0.83	Lincolnshire Wolds	0.9
Cotswolds	1.09	Cotswolds	5.62	Humberhead levels	0.53	Humberhead levels	0.67
Rockingham Forest	0.81	Midland Clay Pastures	3.48	Lincolnshire Coast and Marshes	0.52	Lincolnshire Coast and Marshes	0.28

Table 55 Density of PAS and HER data in Northamptonshire's distinctive Natural Areas

seasonally exploited during transhumance. Just as gaps in the distribution of PAS data are often caused by physical search constraints, physical factors may themselves have acted as constraints against settlement, or influenced the type of activities that took place there.

However, away from built-up areas field survey, casual finds and, above all, aerial photography are the principal sources of archaeological evidence on most HERs, and these are often affected by similar recovery constraints to PAS data. Densely wooded areas, for example, are often poorly represented by data on the HERs. Whilst there are often individual sites or areas of activity that are represented by PAS finds but not HER data, PAS data are rarely distributed over wide areas where there is a dearth of HER data. This seems likely to be a result of the fact that PAS data and most other sources of archaeological information are biased towards areas with particular geologies. Aerial photographic evidence, for instance, forms a significant proportion of the data recorded on most HERs, yet it is unevenly distributed, being biased towards permeable sands and gravels which are susceptible to the formation of crop and soil marks. Because such areas are generally good, fertile agricultural land, they are often areas under arable cultivation, where most metal detector users also choose to search. Generally speaking then, it is possible to see that HER and PAS data suffer from

Table 57 Density of PAS and HER data in Cumbria's distinctive Natural Areas

Natural Area	Density of PAS finds per km ²	Natural Area	Density of HER records per km ²
Solway Basin	0.574	Solway Basin	0.872
West Cumbria Coastal Plain	0.129	Border Uplands	0.577
Eden Valley	0.06	Eden Valley	0.372
Border Uplands	0.056	North Pennines	0.23
Cumbria Fells and Dales	0.045	West Cumbria Coastal Plain	0.194
North Pennines	0.011	Cumbria Fells and Dales	0.124
Yorkshire Dales	0.004	Yorkshire Dales	0.087

Table 56 Density of PAS and HER data in North and North East Lincolnshire's distinctive Natural Areas

similar biases in terms of distribution, and it is rare for PAS data to provide extensive new evidence from areas not well represented by HER data.

Nonetheless there are regional nuances in the distributions of HER and PAS data which emerged through quantitative comparison (**Tables 53–7**). This demonstrated that in most regions the areas of highest and lowest densities in both datasets were similar, but this was not always the case and the correspondence was more obvious in some regions more than others.

In Wiltshire, for example, the area most densely populated by PAS data was the Cotswolds, whilst this part of the county is not particularly well represented by HER data (**Table 53**). The area best represented by HER data is the Midvale Ridge, where PAS data are not so widespread. Often the discrepancy between the distributions of the different datasets can readily be explained. The built-up area of Swindon occupies much of Wiltshire's Midvale Ridge, restricting the land available for metal detecting, yet producing large numbers of HER records associated with archaeological work ahead of urban development (Chapter 4, p. 32). In North Lincolnshire the pattern is a little different, and here the distribution of the two datasets is very similar (**Table 56**). This perhaps reflects the impact the physical environment had on the location of ancient settlement, with areas of low terrain avoided because of flooding (Chapter 7, p. 89). The distribution of PAS and HER data is also similar in Cumbria, where the Solway Plain is the area best represented by both datasets and the Yorkshire Dales is poorly represented by both (**Table 57**). Here, this may largely reflect contemporary land use, and as the part of Cumbria under most arable cultivation, the Solway Plain is better suited for providing evidence from both aerial photography and metal detecting.

There is some variation in the relative density of PAS and HER data in different areas of Worcestershire and Warwickshire (**Table 54**), but the distribution can be seen as similar, with the Cotswolds and Severn and Avon Vales fairly well represented in both datasets while Central Herefordshire is very poorly represented by both. Similarly, whilst the relative distribution of PAS and HER data in Northamptonshire is not identical (**Table 55**), the Yardley Whittlewood Ridge and the West Anglian Plain are the

areas best represented by both datasets, although some of the areas poorly represented by PAS data are better represented by data on the HER, largely because of extensive programmes of aerial photography in the county.

What this pattern clearly shows is that whilst there are sometimes differences, PAS data and information from other archaeological sources broadly provide data from the same types of area. They are most closely aligned in areas such as Cumbria and North Lincolnshire, where there are clear geographical and/or historical explanations for areas where data are poorly represented in both datasets.

However, even in the Natural Areas where PAS and HER data share broadly similar distribution patterns, there are usually subtle variations in the way that the data are distributed which reflect the intrinsic differences between the two datasets. Kernel density plots undertaken in each case study region have shown how individual HER records are typically distributed over wider areas than PAS data (see Chapter 3, p. 21 for an explanation of this method), although there is wide regional variation. In Wiltshire, for example, limited amounts of archaeological work at a large number of different sites produce a kernel density plot for HER data which shows much of the county represented by HER data (Chapter 4, p. 34). In contrast, the kernel density plot for HER data in Cumbria shows dense clusters of records reflecting significant amounts of archaeological work undertaken at individual Roman military sites (Chapter 8, p. 105). In contrast PAS data consistently occur in a small number of very discrete clusters in each case study area (for maps showing these kernel density plots see p. 34 for Wiltshire, p. 54 for Worcestershire and Warwickshire, p. 72 for Northamptonshire, p. 91 for North Lincolnshire and pp. 104–5 for Cumbria).

It is possible to recognize a different pattern in the distribution of clusters of HER and PAS data. Clusters of HER data are often directly associated with built-up areas. In many cases these are major Roman sites which developed into modern towns or villages (for example Alcester, Worcester and Carlisle), and frequently see development-led archaeological investigation. Large clusters of PAS data rarely occur in direct association with built up areas, but there is a strong tendency for them to occur on land in the immediate vicinity of towns or villages; they are rare in areas of open countryside. Sometimes it is possible to explain this association by a likely attraction towards known Roman towns by metal detector users. Clusters around Norton (Northamptonshire), which is adjacent to the Roman nucleated settlement of *Bannaventa* (Chapter 6, pp. 81–3) and in the area around Alcester (Warwickshire) (Chapter 5, pp. 57–62) may partially reflect this. However, in each case study region it was possible to show that where significant clusters of PAS finds occurred there was a clear tendency for the finders to reside nearby. This was the case where clusters were associated with known Roman settlements and where the finds were associated with unknown or lesser known Roman activity. This suggests that the presence of known Romano-British activity is not an especially significant factor in metal detector users' decisions as to where to detect.

This is supported by the responses made by detector users to a questionnaire distributed as part of this research

	Number of respondents
Very important	7
Important	19
Not important	38
Question unanswered	1
Total	65

Table 58 Responses to the question 'How important are the presence of known archaeological sites in helping you choose where to detect?'

(Appendices 1 and 2), which asked about the importance of a number of different factors in their choice of where to detect. The presence of known archaeological sites was an important factor in choosing where to search for only a minority (10.8 per cent of respondents selected 'Very important' and 29.2 per cent selected 'Important') (**Table 58**). The majority (58.5 per cent) stated that known archaeological sites were 'Not important'.

A more significant factor was the obtaining of permission to search, selected by 90.8 per cent of respondents. One survey respondent stated 'Permission is the biggest stumbling block. Although I would prefer to be near habitation, I will try anywhere.' This may help explain the tendency for detector users to search on land adjacent to where they live. In an informal interview one finder explained how he searched on land owned by farmers who he had gone to school with when he was a child, and it was through knowing them that he had been able to gain permission to search (Duane Sutch pers. comm.). Knowing landowners, or at least being able to discover who owns land on which they may wish to search, is clearly an important determinant in where detector users operate.

In some cases it is clear that land is being searched by different groups of detector users. In Warwickshire, for example, an area around Alcester was searched by a Worcestershire metal detecting club whose members had travelled quite long distances to search there. However, the majority of the finds (88.3 per cent) on the PAS database were recovered by a single individual who was not a member of that club and who lived just 6km away. The low numbers of finds recorded by members of the metal detecting club probably reflect the fact that they search the area infrequently, whilst the local inhabitant is more likely to be able to search on a regular basis. However, it also seems possible that some local detectorists who search near where they live have a deeper understanding of the historical development of the area than visitors from further afield, and may also feel an emotional attachment to these areas. This may perhaps lead to a greater desire to see artefacts recorded with the PAS in order to contribute to the understanding of their locales. The examination of the number of finders responsible for reporting artefacts from large clusters of PAS data in each case study region, along with the fact that almost all of the localized case studies focused on groups of finds reported by small groups or single individuals, suggests that it is these people who are responsible for the most useful data on the PAS database for

enhancing our understanding of Romano-British settlement. An exception was Roxby cum Risby in North Lincolnshire, where large numbers of finds were recovered by 43 individuals, mostly members of the Scunthorpe Metal Detecting Society (Chapter 7, p. 96). In general however, it seems not to be the material reported by the clubs, but the finds gathered by a small number of dedicated individuals and small groups who report very large quantities of material, often with well-documented and precise provenances, which have the most value for enhancing understanding of ancient settlement patterns.

PAS data and the identification of Romano-British sites

In Chapter 3 a methodology was presented which sought to establish a way in which PAS data could be used to recognize potential areas of Romano-British settlement or site-based activity. The methodology defined individual PAS findspots as single finds or groups of material where individual finds are not separated by a distance of more than 200m (Chapter 3, pp. 21–3). In order to differentiate between potential settlement sites and finds which may relate to ‘off-site’ activity, a quantitative approach was adopted and the findspots were divided into five types: single finds of metalwork; small groups containing between two and four metal objects; medium groups containing between five and ten metal objects; large groups containing eleven or more metal objects; and findspots represented by entirely non-metal objects. Each findspot was considered alongside the distribution of HER data. Where a PAS findspot occurred within 200m of an HER record then this findspot was considered as potentially related to the HER record, and was defined as ‘previously recorded’.

Where PAS data occurred at least 200m from the nearest HER record they were considered as potential evidence for previously unrecorded Romano-British activity. This methodology was applied to each of the five regional case study chapters.

Table 59 presents a summary of the statistics generated by this methodology in each of the case study chapters, which identified a total of 1,720 individual findspots. In the first four case studies (Wiltshire, Worcestershire and Warwickshire, Northamptonshire and North Lincolnshire and North East Lincolnshire), medium and large groups of finds were considered to represent potential evidence for settlement. In the final case study, Cumbria, this was extended to include small groups, as Romano-British artefacts are less frequently found in this part of Britain than in the south. These findspots potentially relate to a total of 391 sites. Of these findspots 151 (38.6 per cent) were located within 200m of an HER record, and were thus considered to be previously known. Two hundred and forty (61.4 per cent) potential sites were located at least 200m from the nearest HER record, and so were considered to represent previously unrecorded Romano-British activity.

Table 60 presents the number of potential sites represented by PAS data alongside the number of Roman period sites recorded on the National Monuments Record (NMR) for each of the case study regions. An overview of NMR data has been presented in Chapter 3 (pp. 25–6). This data has been used for the comparison instead of HER data

because there are problems with defining sites based on HER data, and inconsistencies in the way that different HERs record information makes comparison difficult, as discussed by Taylor (2007, 11–22).

Numerically, Worcestershire and Warwickshire are represented by the greatest number of PAS sites and Cumbria the least. Northamptonshire is numerically best represented by sites on the NMR and North and North East Lincolnshire has least. If numbers of new PAS sites are considered as a percentage of the number of sites recorded on the NMR for each area, it is possible to suggest that PAS data have more potential to contribute knowledge of new sites in areas that have seen less archaeological investigation than those where fieldwork has been abundant. For example, in Worcestershire and Warwickshire and North and North East Lincolnshire, the two regions least well represented by sites on the NMR, new sites represented by PAS data respectively contribute a further 30.4 and 21.01 per cent to the number of sites known.

In Northamptonshire, the region best represented by Romano-British sites on the NMR, new PAS sites contribute 7.26 per cent. This would seem to suggest an inverse relationship between the availability of NMR data and the occurrence of new sites recognized through PAS.

However, because the size of the regional case studies varies considerably, a better way of comparing the number of sites is based on the density of potential PAS sites and NMR records in each area (**Table 61**). This method indicates that the pattern suggested above is less clear-cut than it seems. For example, North and North East Lincolnshire has the highest density of new PAS sites, yet it also has the second highest density of sites recorded on the NMR. Worcestershire and Warwickshire and Northamptonshire have comparable densities of new PAS sites, yet the NMR data in the latter is considerably denser. This suggests that there is not necessarily a relationship between levels of previous archaeological investigation and the number of new sites recognized through PAS data. PAS data clearly have significant potential for recognizing new sites, both in areas where previous archaeological investigation has been limited and in areas where it has been extensive. However, the fairly low density of new sites recognized through PAS data in Cumbria suggests that the PAS data will be of less value in some areas than others, and their potential is dictated by land use to a large extent.

When compared with the 1,810 Romano-British sites recorded on the NMR across the case study regions, the 240 potentially unrecorded PAS sites represent a 13.3 per cent increase in the number of sites known. The 151 PAS sites from where there is already some information represents contributory knowledge for 8.3 per cent of sites recorded on the NMR. Caution must be applied to these statistics as the calculation has been based on the number of new PAS sites as defined against the distribution of HER data, not NMR data. However, as discussed in Chapter 3 (pp. 25–6), calculating the total number of Romano-British sites represented by HER data is problematic, and comparison with Roman sites recorded on the NMR data provides a workable alternative.

Wiltshire				Worcestershire and Warwickshire		
Findspot type	Located at least 200m away from nearest HER record	Within 200m of HER record	Total	Located at least 200m away from nearest HER record	Within 200m of HER record	Total
Single metal objects	145	26	171	217	54	271
Small groups	82	15	97	119	36	155
Medium groups	30	9	39	43	21	64
Large groups	31	11	42	33	30	63
Non-metal	36	14	50	31	12	43
Total	324	75	399	443	153	596

Northamptonshire				North and North East Lincolnshire		
Findspot type	Located at least 200m away from nearest HER record	Within 200m of HER record	Total	Located at least 200m away from nearest HER record	Within 200m of HER record	Total
Single metal objects	132	28	160	69	27	96
Small groups	66	43	109	36	8	44
Medium groups	21	10	31	15	11	26
Large groups	26	37	63	14	8	22
Non-metal	21	7	28	8	2	10
Total	266	125	391	142	56	198

Cumbria				Total from all regional case studies		
Findspot type	Located at least 200m away from nearest HER record	Within 200m of HER record	Total	Located at least 200m away from nearest HER record	Within 200m of HER record	Total
Single metal objects	51	23	74	614	158	772
Small groups	20	8	28	323	110	433
Medium groups	5	4	9	114	55	169
Large groups	2	2	4	106	88	194
Non-metal	13	8	21	109	43	152
Total	91	45	136	1266	454	1720

Table 59 Numbers of PAS findspots from each regional case study area divided by assemblage size

Case study region	Area of region (km ²)	Number of potential PAS sites	Number of new potential PAS sites	Number of sites recorded on the NMR	Number of new potential PAS sites as a percentage of those on NMR
Worcestershire and Warwickshire	3718.044	127	76	250	30.4
Northamptonshire	2366.989	94	47	647	7.26
Wiltshire	3485.43	81	61	426	14.32
North and North East Lincolnshire	1079.268	48	29	138	21.01
Cumbria	7185.067	41	27	349	7.74
Total	17834.8	391	240	1810	13.26

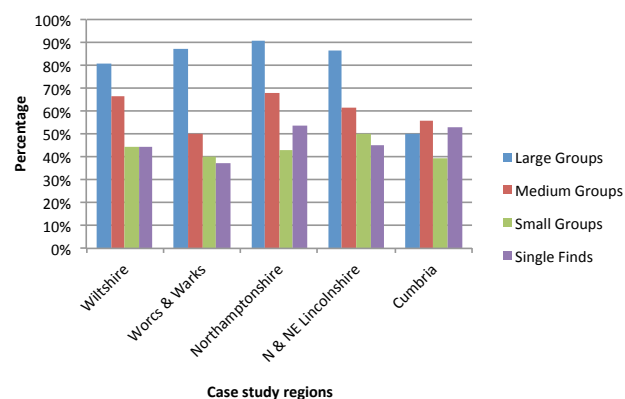
Table 60 The number of potential sites represented by PAS data and number of sites recorded on the National Monuments Record for each case study region

Case study region	Density of potential PAS sites (number of sites per km ²)	Density of new potential PAS sites by case study area	Density of sites recorded on the NMR (number of sites per km ²)
North and North East Lincolnshire	0.045	0.027	0.128
Northamptonshire	0.040	0.020	0.273
Worcestershire and Warwickshire	0.034	0.020	0.067
Wiltshire	0.023	0.018	0.122
Cumbria	0.006	0.004	0.049

Table 61 Density of potential sites per km² represented by PAS data and recorded on the National Monuments Record for each case study region

The composition and chronology of groups of PAS finds

In Chapter 2 consideration of the composition of groups of finds from different findspots was identified as a possible means of characterizing sites, and for exploring differences in the social and economic relationship between people who occupied different sites. In most of the case study regions the majority of PAS findspots are dominated by coinage (**Fig. 95** and **Table 62**). Among groups which included metal finds (large, medium, small groups and single metal objects but excluding those entirely represented by non-metal finds), 797 (50.8 per cent) of the 1,568 findspots had more coins than all other artefacts put together.



The dominance of coinage was most marked in the large groups, of which 86.1 per cent had more coins than all other artefacts combined. This decreases to 59.2 per cent at medium groups, 42.7 per cent at small groups and 44.7 per cent of single finds were coins. This shows how it is generally groups which have produced large numbers of coins that have been identified as the most likely evidence for settlement activity.

Aside from coinage, other types of artefact were generally reported in small numbers at most findspots. Where ceramics were collected these were sometimes reported in large numbers, outnumbering coinage at some sites (Wroxall in Warwickshire, for example, see p. 55) although in these cases the figures are undoubtedly skewed by a small number of large ceramic collections. Were ceramics to be collected from all PAS sites, it is likely that many would produce much more significant quantities. Dress accessories (predominantly brooches) were the next most common type of metalwork, and were well represented at some findspots. Other types of object were generally uncommon. **Table 63** presents average artefact groups from potential PAS sites in each of the case study areas, along with a total based on all case study regions combined. These averages are based on large and medium groups in all of the case studies except Cumbria, where small groups have also been included.

Table 63 shows how, based on averages derived from the 391 PAS sites in all case study regions, the average Romano-British site in this study produced 24.5 coins, 3.83 dress accessories, 7.64 ceramics and 1.85 other artefacts.

Figure 96 demonstrates the similarities in the composition of findspots from the different case study

Figure 95 Percentages of findspots where coins form the majority of all artefacts recovered, shown by group size and case study area

Case study region	Large groups		Medium groups		Small groups		Single finds		Total of all groups	
	Number of findspots where coins are the majority find type	Total number of findspots	Number of findspots where coins are the majority find type	Total number of findspots	Number of findspots where coins are the majority find type	Total number of findspots	Number of findspots only represented by single coins	Total number of findspots	Number of findspots where coins are the majority find type	Total number of findspots
Wiltshire	34	42	26	39	43	97	76	171	179	349
Worcestershire and Warwickshire	55	63	32	64	62	155	101	271	250	553
Northamptonshire	57	63	21	31	47	109	86	160	211	363
North and North East Lincolnshire	19	22	16	26	22	44	43	96	100	188
Cumbria	2	4	5	9	11	28	39	74	57	115
Total	167	194	100	169	185	433	345	772	797	1568

Table 62 Findspots where coins form the majority of all artefacts recovered, shown by group size and case study area

Case study region	Coins		Dress accessories		Ceramics		Other		Total numbers of artefacts
	Average number	Average % in site groups from case study	Average number	Average % in site groups from case study	Average number	Average % in site groups from case study	Average number	Average % in site groups from case study	Average number
Wiltshire	26.58	68.24%	4.04	16.14%	12.73	9.07%	1.6	6.55%	44.95
Worcestershire and Warwickshire	23.57	58.85%	4.89	21.80%	7.1	10.74%	1.61	8.61%	37.17
Northamptonshire	38.18	72.78%	3.76	13.29%	4.83	4.21%	2.16	9.73%	48.93
North Lincolnshire	15.21	62.20%	3.15	25.69%	2.6	7.27%	0.83	4.84%	21.79
Cumbria	2.76	43.08%	1.15	21.33%	11.41	8.40%	3.46	27.20%	18.78
Total averages	24.5	62.90%	3.83	19.01%	7.64	8.15%	1.85	9.94%	37.82

Table 63 Average artefact type based on the average from all potential sites in each case study region

regions. There are, however, some regional differences. For example, coinage is the single most common artefact type in every case study region, comprising 62.9 per cent of the total from all groups. However, in Northamptonshire coins account for an average of 72.78 per cent of finds from PAS sites while in Cumbria, coins make just 43.08 per cent and ‘other’ artefacts make up a much higher proportion. The unusually high number of ‘other’ artefacts at sites from Cumbria requires some explanation. The inclusion of small groups of finds as potential sites in Cumbria introduces findspots with low numbers of artefacts which may be seen as casual losses elsewhere. For instance, ‘Waitby 2’ comprises just three artefacts, a horse harness pendant and two button and loop fasteners. However, even if one excludes small groups of finds when calculating the average, Cumbria’s average proportion of artefacts in the ‘other’ category comes to 21.59 per cent, more than double the average of

Northamptonshire, the county with the next highest average of ‘other’ artefacts (9.7 per cent). This is because there are several large and medium findspots in Cumbria which have produced significant numbers of finds in the ‘other’ category. At ‘Holme St Cuthbert 9’, for example, 38 iron nails, many of which were identified as hobnails, were recovered from a group of finds which clearly related to a Romano-British cremation burial, as burnt human remains and large quantities of ceramics were also recovered. Several other findspots in Holme St Cuthbert also have large numbers of ‘other’ finds, and many of these are nails recovered with ceramics and human remains as part of cremation burials. Findspots such as these are important locally as unusually high quantities of particular find types can be indicative of very particular activities, but here it is important to be aware of their skewing effect. A further reason for the higher proportion of ‘other’ finds in Cumbria is that findspots are

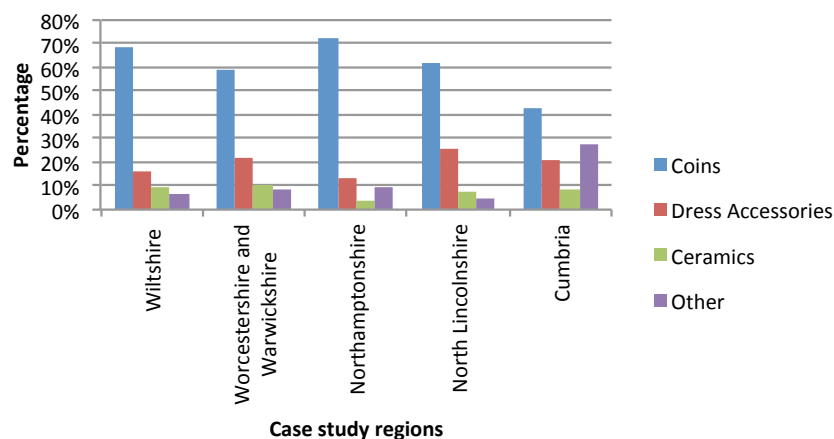


Figure 96 Chart showing average artefact type composition at potential PAS sites in all case study regions

generally very poorly represented by other metalwork. In many cases Cumbrian sites actually contain similar or smaller numbers of finds in the ‘other’ category as sites from the other case study regions, but these show as a higher proportion because coins and dress accessories are so poorly represented. Cumbria aside, the other four case studies have very similar proportions of artefact types. Sites in all case studies have high average numbers of coins, although in North Lincolnshire and Worcestershire and Warwickshire the average number of coins is slightly lower than Northamptonshire and Wiltshire. Given that these case study regions are similar in terms of their Romano-British settlement patterns, it is difficult to determine whether the slight differences in the average numbers of coins from these regions is significant.

The analysis of the composition of artefact assemblages as a method for recognizing different functions for sites has developed in recent years. Cool and Baxter, for example, have used Correspondence Analysis to explore how different assemblages at sites produce particular ‘artefact profiles’ based on functional activities (Cool and Baxter 1995; 1999; 2002). By comparing artefact profiles from sites with known functions, Cool and Baxter have suggested that it may be possible to characterize sites based on their artefact assemblages. At the start of this research it was hoped that such a method might prove fruitful for attempting to interpret groups of finds from PAS sites. However, the lack of variation in the composition of most PAS groups makes applying such a technique to PAS data very difficult. As shown above, the vast majority of potential sites represented by PAS data display profiles which are dominated by coinage. Occasionally unusual findspots can be recognized which may have particularly high proportions of dress accessories or other artefacts (Higham Ferrers, in Northamptonshire for example, in Chapter 6, pp. 74–5). However, it does not require sophisticated statistical techniques to identify these as unusual, and they can be recognized quite quickly by comparing tables of finds from individual findspots. In some such cases it might be possible to suggest that unusual profiles mark them out as representative of ancient activity that differs in some way from that at other findspots, but it is most important to remember that the resource has been haphazardly gathered and reported, and there may well be post-depositional or recovery factors that are responsible for unusual assemblages

(see Chapter 3, pp. 17–21). For instance, some metal detector users do not recognize the value in reporting common and badly deteriorated Roman coins (Walton 2009), and this could clearly influence the resultant dataset from a particular findspot.

The limited variation in the composition of artefact groups at PAS sites requires some explanation. Does it, for example, reflect the reliance upon metal detectors as the source of evidence and the limitations associated with this method of recovery, or genuine similarities in the types of Romano-British site routinely searched by metal detector users? Certainly, groups of finds recovered by metal detector users differ from those recovered during archaeological excavation. Ceramics, a significant component of most excavated assemblages, are only collected and reported by some metal detector users, and when they are reported it is often only a small sample of those present in the plough soil. Most users also set their metal detectors to discriminate against iron objects, and iron artefacts only occur occasionally at PAS sites. Furthermore, it is possible that some artefacts that are not clearly identifiable are discarded by detectorists which, were they to be found in context on an archaeological excavation, would be included in a finds assemblage. As coins, brooches and other dress accessories are some of the most readily identifiable Romano-British artefacts, this may partially explain the higher proportional representation of these finds types over ‘other’ artefacts. If one were to exclude ceramics, other non-metal objects and iron from many excavated assemblages and focus on the non-ferrous metalwork, then many Romano-British sites would produce similar proportions of find types.

Table 64 presents the proportions of coins, dress accessories and other artefacts for a small number of different excavated sites if objects of non-metal and iron are excluded. Whilst there is some variation, it is possible to see that in all cases coinage is the dominant find type. Dress accessories are the next most common artefact type at the rural sites, whilst diverse ‘other’ finds make up more of the proportion at Catterick and Colchester (though they are still only a very small proportion of the finds at the latter). It is not appropriate to compare these statistics directly with those from PAS sites, as occasional ceramics, other non-metalwork and iron were collected at some PAS findspots. Nor is this list of excavated sites a large enough sample to produce robust results. However, the results might suggest

Excavated site	Type of site	Coins number	%	Dress accessories number	%	Other number	%	Total number
Catterick, N Yorks (Wilson 2002)	Forts and small town	1209	63.13%	218	11.38%	488	25.48%	1915
Colchester, Essex (Crummy 1983)	Fort and <i>colonia</i>	10890	94.50%	234	2.03%	400	3.47%	11524
Great Bedwyn, Wilts (Hostetter and Howe 1997)	Villa (earlier non villa settlement)	74	56.06%	30	22.73%	28	21.21%	132
Sponne School, Towcester, Northants (Atkins and Chapman 2002)	Low status rural settlement	2	100.00%	0	0.00%	0	0.00%	2
Bradley Hill, Somer (Leech <i>et al.</i> 1981)	Farmstead and cemetery	78	81.25%	11	11.46%	7	7.29%	96
Chatteris, Cambs (Evans 2003)	Rural settlement	360	79.82%	65	14.41%	26	5.76%	451
Euridge Manor Farm, Wilts (Luckett 2000)	Villa (earlier non villa settlement)	177	90.31%	13	6.63%	6	3.06%	196
Dragonby, North Lincs (May 1996)	Rural nucleated settlement	318	37.60%	161	19.1	366	43.3	845

Table 64 Proportions of non-ferrous metal find types at a selected group of excavated Romano-British sites

that ‘other’ finds tend to form the lowest proportions of assemblages at low-status rural sites and may be better represented at military sites and towns. Extrapolating from this, it is perhaps appropriate to suggest that many PAS sites represent rural activity of some sort, and this certainly seems likely given their geographical distribution, away from the built up areas which in many cases have developed from Roman towns (see above).

As coins dominate most PAS sites they offer the most potential for characterizing sites and determining their chronology. It is now recognized that patterns of coin loss at Romano-British sites can be used to help recognize similarities and differences between individual sites (Casey 1988; Reece 1991; 1995; 2003). The production of coin profiles for individual sites allows comparison with those for which the character is known, making tentative characterization of sites possible based upon patterns of coin loss. Reece has shown how two very broad patterns of coin loss are recognizable at Romano-British sites, an urban and a rural pattern (Reece 2002, 102). Sites adhering to the urban pattern produce more coins of early date than those with a rural pattern.

Both urban and rural sites have an increase in coins from 260 onwards, but in sites conforming to the urban pattern, late 3rd-century AD radiate coins make up a greater proportion of the total coinage than 4th-century AD *nummi*. Rural Romano-British sites tend to produce low numbers of early Roman coins and have a greater proportion of 4th-century AD coins than those of the late 3rd century AD (Reece 2002, 102).

In this study coin profiles have been created and analysed for a small number of PAS sites where sufficient quantities of coins were present (see Chapter 3, pp. 26–7 for a fuller

discussion of Reece’s method, and footnote 2 on p. 29 for a slightly alternative approach to that adopted in this study). In Cumbria, no sites produced enough to allow this analysis. In the 29 sites investigated in the other case studies every one produced a rural pattern, with greater proportions of mid to late 4th-century AD *nummi* than late 3rd-century AD radiates. This adds further support to the suggestion that most sites represented by PAS data represent rural settlement of some sort. Sites with characteristically ‘rural’ patterns of coin loss can include farmsteads, villages, rural temples, villas and small market centres. In any case metal detector finds are more likely to be from rural sites than urban or military sites because many of the latter are under modern built-up areas and where they are not they are usually scheduled monuments.

The occurrence of large quantities of Valentinianic (AD 364–78) coinage is often associated with Romano-British temples (Reece 2002, 104), and many of the PAS analyses also displayed peaks in this period. Whilst some of these sites produced additional evidence for possible ritual activity (West Lavington 4 and Great Bedwyn 8, for example, both in Wiltshire), the occurrence of large numbers of coins of this period at many other locations indicates that it may be a pattern associated with rural settlement more generally, and need not necessarily reflect a specifically religious phenomenon.

The interpretation of any site identified through PAS data must inevitably be tentative, as there are clearly factors which can affect the material available for study from any individual findspot (Chapter 3, pp. 17–21). If the interpretation of individual PAS findspots is to move beyond the initial tentative identification stage, then some form of archaeological fieldwork is desirable. This has so far been

	Early Roman evidence	Early to late Roman evidence	Late Roman evidence	Limited dating evidence	Total
Wilts large groups	3	33	6	0	42
Wilts medium groups	9	18	10	2	39
Worcs and Warks large groups	2	61	0	0	63
Worcs and Warks medium groups	16	40	6	2	64
Northants large groups	2	51	10	0	63
Northants medium groups	6	16	9	0	31
North and North East Lincs large groups	0	20	2	0	22
North and North East Lincs medium groups	5	15	6	0	26
Cumbria large groups	2	2	0	0	4
Cumbria medium groups	4	3	1	1	9
Cumbria small groups	14	2	3	9	28
Total	63	261	53	14	391

Table 65 PAS findspots divided by chronological evidence

possible at just one of the potential sites identified, Great Bedwyn in Wiltshire. Here two programmes of geophysics, a resistivity survey and magnetometry survey, were undertaken to examine a potential anomaly visible on satellite images from Google Earth, at a potential site identified through PAS finds (Chapter 4, pp. 42–6, **Fig. 25**; Brindle *et al.* 2013).

Seventy large PAS findspots were included in the ten micro-level analyses undertaken in the case study chapters. Whilst only a small number were subject to detailed coin analysis, it is nonetheless possible to see that, as well as being dominated by coins in general, large groups of finds usually included large quantities of late 3rd-century AD radiates and 4th-century AD *nummi* and generally far fewer coins of earlier date. Forty-nine (70 per cent) of these findspots contained coin groups where over 75 per cent of the coins were post-AD 250 in date. Sixty-one (87.1 per cent) had groups of coins where over half were late Roman, and just three (4.3 per cent) produced no late coinage at all. Sixteen (22.9 per cent)

large findspots produced no coins dating to before AD 250. This is a pattern previously recognized by Reece, who has shown how coinage of the late 3rd and 4th centuries AD is significantly more common as site finds than coins of earlier date (Reece 1991; 1995).

This pattern was also apparent in the 34 medium groups of finds that were included in the localized case studies, though it was slightly less marked in these. Fifteen (44.1 per cent) had at least 75 per cent late coins (i.e. coins of post AD 260 in date) and at 21 of the medium groups (61.8 per cent) more than half of the coins were post-AD 250 in date. Eight (23.5 per cent) of the medium findspots produced no late coins, whilst early Roman coins were absent from 13 (38.2 per cent). Five (14.7 per cent) produced no coinage at all.

The dominance of late Roman coinage in the groups of finds raises some potential issues associated with using PAS data to recognize and characterize Roman sites. For instance, it is important to appreciate that use of a quantitative method for identifying potential sites is likely to result in a bias towards sites occupied in the late Roman period. Sites that were abandoned before the late 3rd century AD are less likely to have produced enough coins to be included in the ‘large groups’ category.

An attempt to mitigate this has been made by including medium groups of between five and ten artefacts (and small groups in Cumbria) in the definition of a potential site and by considering other finds alongside coinage. This allows consideration of the chronological development at potential sites which may not have produced early coinage, but may nonetheless have witnessed early Roman activity.

This has been explored by comparing the dating evidence provided by brooches from PAS sites alongside the evidence from coins. Brooches are the most common Roman artefacts reported by metal detector users after coins, and whilst not so closely datable, they can at least generally be recognized as being either early or late Roman by reference to examples from excavated contexts. Based on coins and brooches, all 391 potential sites have been divided into three categories; those where evidence is limited to late Iron Age and early Roman finds (1st century BC to AD 250), those that only produce late Roman artefacts (post-AD 250) and those that have produced evidence for early through to late activity (**Table 65** and **Fig. 97**).

In most case study regions the general pattern seems to be for activity at PAS findspots beginning in the early Roman period (or carrying on from earlier, pre-Roman activity) continuing until the late Roman period. Potential sites which show apparent continuity between the early and late Roman periods account for 66.8 per cent of all findspots. Those with evidence limited to the early Roman period make up 16.1 per cent and those with exclusively late Roman finds 13.6 per cent. Of the 63 findspots where evidence was limited to early Roman activity, 48 (76.2 per cent) of these were medium-sized groups (including small groups in Cumbria) and this illustrates the danger of relying upon a single measure of site definition. Were one to use a rigid numerical definition which failed to take account of medium sized groups, many of these potential sites which may have been abandoned before the late 3rd century AD would have remained unrecognized because, as

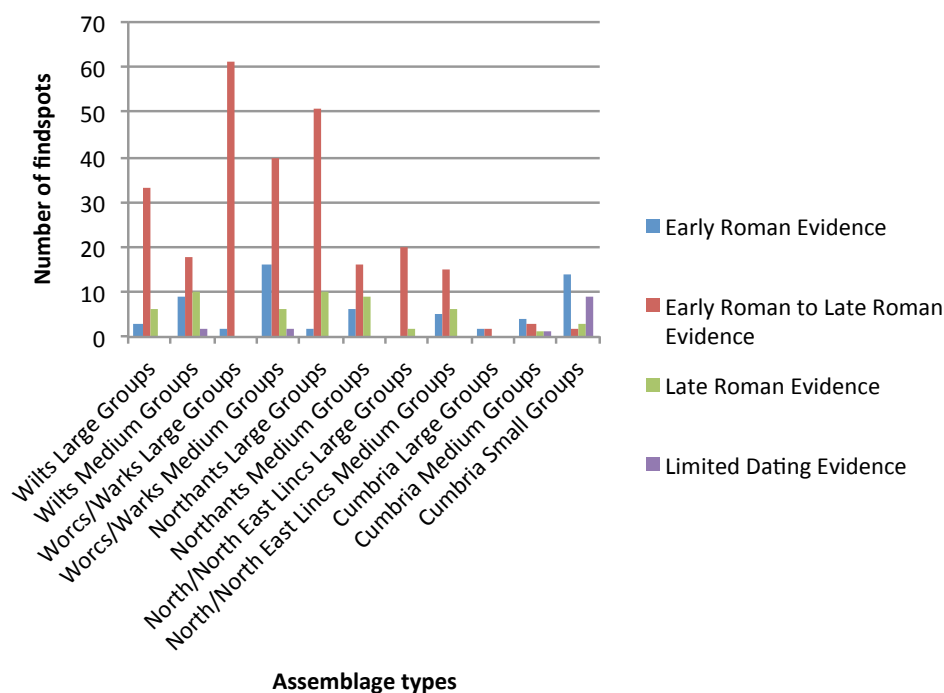


Figure 97 Number of PAS sites by date. Early Roman = pre-250 AD, Late Roman = post-250 AD

we have seen, early Roman coinage is generally much less abundant.

The chronological pattern is broadly similar in all case study regions except for Cumbria, where there is much less evidence for continuity throughout the Roman period and findspots represented by early evidence are most common. There is also a greater number of findspots exclusively represented by artefacts that are not closely datable in Cumbria than in any other case study region (above, **Table 65**). The pattern witnessed in the four most southerly case study regions broadly corresponds to the evidence from many other areas of southern Britain, where most Romano-British sites show continuity of occupation, and where there is also evidence for some sites having been abandoned in the early Roman period (Fulford 1992, 27; Taylor 2007, 110). The small number (53, 13.6 per cent) of potential sites represented by exclusively late Roman finds supports the pattern recognized by Taylor in his survey of a number of sites represented by fieldwalking data in the East Midlands, i.e. that the foundation of new sites after the early Roman period was generally low (Taylor 2007, 102).

A handful of findspots, just 12, have produced evidence for continuity from the late Iron Age into the early Roman period, suggested by the presence of Iron Age coin finds. This does not, of course, necessarily mean that other sites were not occupied in the later Iron Age or earlier, as late Iron Age metalwork is generally found in much lower quantities than Roman material, and it is also likely that some brooches which fall into the 'Early Roman' category are pre-conquest in date. Given the pattern for continuity of land use between the late Iron Age and early Roman period in many other parts of Britain (Fulford 1992, 27; Taylor 2007, 110), it is probable that many PAS findspots would have been preceded by Iron Age settlement, or that there was some settlement shift from Iron Age settlements nearby.

In Cumbria, the generally low numbers of artefacts recovered from PAS findspots makes interpretation

challenging, yet the discrepant chronological pattern in this case study region requires some explanation. Only 7 of the 43 (17.1 per cent) potential sites in Cumbria have produced evidence for continued activity from the early to late Roman periods, whilst there are 20 (48.8 per cent) potential sites which are only represented by early Roman material. Many of these findspots are small groups, in some cases as few as two objects, yet these have been included as potential sites in Cumbria because metal finds are generally rare here. The dating evidence provided by PAS finds is therefore unlikely to reflect the full chronological extent of any activity. Many small groups do not provide close dating evidence at all, comprising finds which can only be broadly dated to the Roman period. Where Cumbria differs most significantly from the southern case studies is in the low numbers of late 3rd- and 4th-century AD coins recovered from most findspots, a pattern also shown, though less dramatically, in Shotter's lists of coins from the county (Shotter 1989; 2005). Such coins are less frequent in Cumbria than elsewhere in the province, but where they do occur they seem predominantly to be found associated with towns and forts rather than rural settlements (Shotter 1989, 45) which are often very poorly represented by metal finds. As most known forts and towns in Cumbria are scheduled the dearth of PAS data from these sites should come as no surprise. In Cumbria, as in the other regional case studies, many potential sites may represent rural settlements of some sort. Why many of these sites should produce early but not late Roman finds is a difficult question to answer. There is little to suggest that rural sites that survived the conquest in Cumbria were any more prone to earlier abandonment than those elsewhere in the province, though dating evidence available from ceramic assemblages has also failed to identify late Roman material at several excavated rural sites (Higham 1981; 1982; 1983). Given that late Roman finds recovered from findspots in the other case study regions are overwhelmingly coins, it may be that the relationship

between low status rural sites and the Roman army was not one which required widespread coin use, and that payment of tax and the procurement of necessities was based upon other systems of exchange. Indeed, Walton has suggested that the native population in the north may have actively rejected bronze denominations (Walton 2012, 55). The infrequent coins recovered may therefore reflect only occasional engagement with the Roman monetary system, or possibly that these coins were not seen by many occupants of rural settlements in the north as money at all. This is very speculative, and the reliance on very small groups of finds must limit the confidence with which we can classify these findspots as potential sites at all. The possibility remains that they relate to ephemeral activity associated with the Roman military, particularly as many of these groups occur near Roman forts.

The inclusion of the Cumbrian case study has shown that whilst there are strong chronological and compositional similarities between groups of finds from different parts of Britain, there can also be distinct regional differences and these factors must be considered if one is to make the best use of PAS data. Dominated by metal detector finds, PAS data have been shown to be of most use in areas where metal artefacts circulated widely during the Roman period, and where artefact recovery is not hampered by geographical constraints. Nonetheless, even in Cumbria, PAS data have proven to be of value, allowing recognition of up to 27 new potential sites (Chapter 8, p. 104) whilst displaying a very different chronological pattern to that in the lowland case study regions.

The wider significance: the contribution of PAS data to some themes in the study of Roman Britain

One of the principal strengths of the PAS data is their extensive geographical availability and the consequent potential for recognition of new sites and understanding of settlement patterns, particularly in areas where previous archaeological work has been limited. As we have seen above (p. 118 and **Table 60**) there are up to 240 new 'sites' represented by PAS data in the five case study regions, an average of 48 new sites per case study. Multiplying this figure by the 48 counties in England and the eight preserved counties of Wales gives a figure of 2,688 (although the case study in Chapter 5 included two counties, Worcestershire and Warwickshire, the case study in Chapter 7 comprised only part of a county, North and North East Lincolnshire, so extrapolating this figure to the rest of England and Wales seems acceptable). An alternative method is to consider the number of new PAS 'sites' in relation to the total area included in the case study regions (17,835 km²), which produces a figure of 0.0135 new sites per km². Extrapolating this to England and Wales as a whole, with a combined area of 151,211 km² (Times Books 2007, 67) suggests a figure of 2,041 new 'sites'. Yet another way of exploring this is to consider the number of new sites represented by PAS data in the case study regions against the total number of Roman PAS records included in the study. Based on the 18,523 PAS records used for this study, there is an average of one new site for every 77.2 Roman records. Extrapolating this to the 160,447 Roman records on the PAS database¹ would give a total of 2,078 new

sites. These alternative methods produce a range of 2,041 to 2,688 new Roman sites represented by PAS data nationally with a mean of 2,269 and standard deviation of ± 363 .

Taylor recognizes 27,902 individual Romano-British rural settlements in England (2007, 12). A similar study has not yet been undertaken for Wales, but extrapolating from Taylor's figures for England it is possible to suggest that there may be a further 4,445 settlements in Wales, based on area. It is important to note that this may be an overestimation, as there are extensive uplands in Wales which may have been much less densely settled than parts of lowland England. However, it does provide a likely upper limit with which to work, providing a total of 32,347 Romano-British rural settlements for England and Wales. Based on these figures, nationally PAS data may contribute between 5.8 and 8.1 per cent new sites to those currently known.

There is clearly significant variation in the area available for metal detector users to search across England and Wales (Chapter 1, pp. 3–4) as well as in the Romano-British settlement pattern (Chapter 2, p. 11), so extrapolating results from a small number of case study areas to speculate over the number of potential new sites represented by the data across the province is fraught with uncertainty, and the above figures must be treated with caution. Yet the method also presents a useful means for considering how this increase in evidence for Romano-British settlement might contribute to the understanding of population numbers in the Roman period.

As discussed previously, it seems likely that most findspots represent rural settlements of some sort. Of course, these rural settlements would have been very varied and estimating an average site's population is extremely difficult. Not only is there much uncertainty regarding family size and organization in Roman Britain (Millett 1990, 185–6), but there is a lack of good chronological information available for many sites and the population is certain to have fluctuated throughout the Roman period.

The problem is compounded by the limited published evidence for density of settlement in different parts of Britain (Millett 1990, 183). Millett used a small number of published field surveys to calculate a mean national site density for England and Wales. The case studies incorporated in this study include seven areas where combined PAS data and HER data are extensive enough to explore site density, presenting an opportunity to assess the reliability of Millett's density calculations (**Table 66**).

The results of these studies are comparable to the densities compiled by Millett, and when included in a new calculation of a national mean do not alter his figure of 0.8 ± 0.5 sites/km². A calculation based exclusively upon the PAS and HER sites included in this study arrives at a similar figure of 0.8 ± 0.4 sites/km² (**Table 67**).

It is important to note that the site densities displayed in **Table 67** are from seven areas where PAS data are abundant, and were selected for analysis because of the wealth of evidence available. Site densities calculated using all new PAS sites and NMR sites in the wider macro-level studies are between one and two orders of magnitude lower than in the above case studies (**Table 68**). This discrepancy is likely to reflect the difference between calculations of site

Area	Type of information	Density km ²	Reference
Bedfordshire	Sites and Monuments Record	0.2	(Simco 1984)
Cambridgeshire	Sites and Monuments Record	0.1	(Wilkes and Elrington 1978)
Winchester District	Sites and Monuments Record	0.1	(Schadla-Hall 1978)
Basingstoke area	Non-intensive survey	0.6	(Millett 1983b)
NW Essex	Intensive survey	1.3	(Williamson 1984)
Maddle Farm	Intensive survey	0.7	(Gaffney and Tingle 1985; 1989)
Northamptonshire	Non-intensive survey	0.4	(Taylor 1975)
Oxfordshire	Non-intensive survey	1	(Miles 1982)
Charlton area	Intensive survey	0.8	(Cunliffe 1973)
Elsted, Sussex	Intensive survey	0.2	(Redknap and Millett 1980)
Home-on-Spalding Moor	Intensive survey	0.8	(Halkon 1987)
Tame Valley	Non-intensive survey	0.6	(Smith 1977)
Fenland	Intensive survey	0.3	(Hallam 1970)
Wharram area	Intensive survey	0.5	(Hayfield 1987)
West Sussex coastal plain	Non-intensive survey	0.5	(Pitts 1979)
Shropshire	Intensive survey	1.7	(Fowler 1972)
M5: Somerset–Gloucestershire	Intensive survey (road building)	1.5	(Fowler 1972 (adjusted as Gregson 1982))
Brailes study, Warwickshire	PAS and HER	0.8	This book, pp. 62–6
Alcester study, Warwickshire	PAS and HER	0.4	This book, pp. 57–62
Titchmarsh study, Northamptonshire	PAS and HER	1.4	This book, pp. 75–81
West Lavington study, Wiltshire	PAS and HER	0.9	This book, pp. 37–42
Norton study, Northamptonshire	PAS and HER	0.6	This book, pp. 81–3
Hibaldstow area study, North Lincolnshire	PAS and HER	0.8	This book, pp. 93–6
Roxby-cum-Risby, North Lincolnshire	PAS and HER	0.7	This book, pp. 96–9
Mean (all surveys)		0.7	
Standard deviation		± 0.4 sites/km ²	
Mean (without SMR)		0.8	
Standard deviation		± 0.4 sites/km ²	

Table 66 Rural site densities from field surveys and combined PAS and HER data, adapted from Millett (1990, 184)

densities based on ‘intensive’ and ‘extensive’ sources of information. The individual case studies which produced enough distinct PAS ‘sites’ to make density calculations possible at a micro level were all in areas where finds were reported to the PAS over a long period of time by local metal detector users who intensively searched areas near to where they live. It is clearly these types of study that provide the most useful evidence for assessing rural site density. The concurrence between the figures in the micro-level analyses and Millett’s density study lends support to his estimate of the population of Roman Britain, at around 3.7 million, if one accepts his site density figures and his calculation for the population of individual rural sites at between 20 and 50 people (Millett 1990, 184–5).

Based upon the five PAS case studies and the surveys compiled by Millett, there do not appear to be any clear patterns emerging which explain the variation in densities between the different studies. The case studies at Alcester, Titchmarsh and Norton all occur in the hinterlands of

Roman ‘small towns’, yet their site densities are divergent. Alcester and Brailes are both in Warwickshire, yet they also have quite different densities, and this is also the case in Northamptonshire at Titchmarsh and Norton. Further analyses of intensively detected areas may allow this to be reconsidered in the future, and the above discussion illustrates the value of PAS data for undertaking such studies.

There is currently a very unsatisfactory understanding of the social and economic relationships between different types of rural Romano-British settlements. Whilst it will normally be very difficult to ascertain tenurial relationships between settlements, at the very least PAS data have the potential to identify potential settlements in the vicinity of known villas, which may or may not have had economic or social relationships with the known sites. **Table 69** shows how in four case study regions, there are 88 potential sites located within 1km of at least one known or suspected villa (Cumbria has no known villas). Whilst at face value these

Area	Density km ²
Brailes study, Warwickshire	0.8
Alcester study, Warwickshire	0.4
Titchmarsh study, Northamptonshire	1.4
West Lavington study, Wiltshire	0.9
Norton study, Northamptonshire	0.6
Hibaldstow area study, North Lincolnshire	0.8
Roxby-cum-Risby, North Lincolnshire	0.7
Mean	0.8
Standard deviation	± 0.3 sites/km ²

Table 67 Rural site densities from combined PAS and HER data in five case studies

PAS sites may say more about the density of rural settlement in the Roman period than about social status, particularly as the status of sites can be difficult to ascertain from the finds assemblages, the identification of sites in the area surrounding known villas may provide targets for programmes of fieldwork by workers interested in the study of landscapes associated with individual villas. For example, at Box, in Wiltshire, one PAS potential site is located approximately 0.5km away from a villa discovered in the early 19th century (Scott 1993, 198) and approximately 700m from a courtyard villa excavated by Hurst in the 1960s (Hurst *et al.* 1987). It is uncertain whether the PAS site represents a further villa, a farmstead, or perhaps even a cemetery associated with the settlements nearby. Similarly, in Princethorpe, Warwickshire, two distinct PAS sites are located 500m and 950m respectively from a settlement interpreted as a villa (Scott 1993, 180). In Northamptonshire a PAS site occurs some 700m east of the villa at Piddington, from one of the few parts of the parish not well represented by evidence from aerial photography. In North Lincolnshire at Barrow on Humber, significant quantities of finds are recorded on the PAS database from a findspot approximately 800m from an excavated site, interpreted as a possible villa (Scott 1993, 117).

These additional PAS sites in areas surrounding villas clearly reinforce the pattern now recognized through fieldwork at sites such as Stanwick (Northamptonshire) (Neal 1989) and Maddle Farm (Berkshire) (Gaffney and Tingle 1989) that villas rarely occur in isolation, and are usually just

Table 69 Potential sites represented by PAS data within 1km of known villas

Case study region	Number of potential PAS sites within 1km of a known villa (excluding PAS sites already recorded as known villas)
Wiltshire	29
Worcestershire and Warwickshire	21
Northamptonshire	27
North Lincolnshire	11
Cumbria	0
Total	88

Case study region	Density km ²
North and North East Lincolnshire	0.155
Northamptonshire	0.293
Worcestershire and Warwickshire	0.088
Wiltshire	0.140
Cumbria	0.052
Mean	0.146
Standard deviation	± 0.09 sites/km ²

Table 68 Site densities from combined PAS and NMR data in all case study regions

one part of wider, densely settled rural landscapes, populated by farmsteads and small villages.

Conclusion and thoughts for the future

This study has sought to assess the value of Portable Antiquities Scheme data as a resource for studying Roman Britain. It has introduced and characterized the data, presented their strengths and limitations and developed a methodology designed to maximize their archaeological potential for studying Romano-British settlement. The contribution of PAS data was explored in five case study regions and two levels of analysis were employed in each of these. Exploration of the distribution of Roman PAS data at both macro and micro levels enabled discussion of their value for studying broad patterns of ancient settlement as well as local site and landscape specific evidence. The methodology developed has enabled PAS data to enhance understanding of Roman settlement in several individual regions and sites.

In Wiltshire (Chapter 4) 81 Roman ‘sites’ were recognized through PAS data and 61 of these were identified as being new (p. 34). These sites have a largely rural distribution and contribute to the understanding of the settlement pattern in the county. In particular, the detailed local case studies enabled identification of a densely settled rural landscape at West Lavington (Chapter 4, pp. 37–42) and a tentatively identified rural shrine at Great Bedywn (Chapter 4, pp. 42–6). Here a short programme of geophysical fieldwork augmented the data recorded on the PAS database, suggesting that the artefacts recovered were associated with an enclosure (pp. 42–6).

In Worcestershire and Warwickshire (Chapter 5) the distribution of data was similarly rural, and was clearly biased towards low-lying river terraces, supporting the pattern known from other archaeological sources (pp. 51–5). Here, 127 sites were recognized, of which 76 were new (p. 55). Detailed case studies in this region were able to identify several probable rural settlements in the hinterland of the Roman ‘small town’ at Alcester (pp. 57–62) and an area of very dense rural settlement in Brailes (pp. 62–6). In Chapter 6 the hinterlands of two ‘small towns’, Titchmarsh (pp. 75–81) and *Bannaventa* (pp. 81–3), were explored in detailed studies in Northamptonshire, and PAS data enabled recognition of several sites in these areas. As in the other case studies the distribution of PAS data was predominantly rural. Ninety-four sites were identified in the county and 47 of these were new (p. 73). In Chapter 7, rural settlements

were identified in the hinterland of a small town at Hibaldstow (pp. 93–6) and further detailed analysis focused on several settlements in an area surrounding the well-known rural settlement at Dragonby (pp. 96–9). The distribution of PAS data in North Lincolnshire and North East Lincolnshire was similar to that of the HER data in the county, with a dearth of data from the low-lying river valleys which may represent the deliberate situation of settlements in areas less prone to flooding (p. 89). In Cumbria (Chapter 8) PAS data were less abundant than in the other case studies, and were also much less widely distributed. Inclusion of this case study has helped demonstrate the regional variability of PAS data and their susceptibility to bias caused by constraints on metal detecting, and to regional variation in ancient settlement and the circulation of metal artefacts during antiquity. Although more limited, PAS data in Cumbria enabled recognition of 41 ‘sites’, of which 27 are new (p. 104). Detailed analyses investigated a ‘site’, possibly associated with the *vicus* at Watercrook (pp. 109–10), and a Roman cemetery associated with the fort at Beckfoot (pp. 110–13). One of the most significant outcomes of the Cumbrian case study was the chronological pattern displayed by the data, which suggested either that the chronology of rural sites in this area was different to that witnessed in the other case studies or, perhaps more probably, that late Roman coinage was not widely adopted at rural sites in the region (p. 105).

In each region the methodology developed in this project has enabled PAS data to be used to enhance understanding of the Roman settlement pattern to some extent. In all case study regions combined, 391 sites were identified through PAS data, 240 of which were previously unrecorded. This represents an addition of up to 13.3 per cent to the sites already known from these areas (p. 118).

As well as these geographically specific outcomes, the comparison of the results presented in this chapter has allowed some general observations to be made about the data’s value as a resource for the wider study of Roman Britain. Their wide geographical availability makes them well suited to broad regional analyses aimed at investigating wide patterns of settlement, yet the data have proven to be of greatest value in areas where land use is predominantly arable and there are limited constraints on metal detecting. The data contribute most in areas that have been intensively searched and where data have been meticulously recorded, and the most promising case studies have been those where artefacts were collected and reported by individuals or small groups who provided precise findspot information. The study has been able to show that where metal detector finds have been intensively collected and recorded, the density of sites is comparable to areas where density has been calculated through the results of field survey, adding support to population models for Roman Britain that have previously used such data (pp. 126–7).

The general characteristics of metal detector assemblages from Romano-British sites has been demonstrated, with most sites producing coins, brooches and a small number of other artefacts (pp. 120–3). Based upon the distribution of sites and comparison with excavated assemblages it seems likely that most Romano-British sites identified through

metal detector finds are rural. Through consideration of the chronological evidence provided by coins and brooches it has been possible to suggest that many sites saw activity which began in the early Roman period or earlier and continued through until the 4th century AD. Apart from in Cumbria, there was generally less evidence for sites being abandoned prior to the 4th century AD or newly established after the 2nd century AD (pp. 124–5).

This chapter has presented and discussed the results of the application of the methodology presented in Chapter 3 to five case study regions. The methodology has attempted to provide ways of interpreting PAS data in order to extract as much information as possible from the resource. There have been many difficulties associated with trying to extract meaning from a body of data comprising records of haphazardly gathered, unstratified artefacts, where the finders of the material followed no set methodology for artefact recovery or for recording.

The primary issue associated with interpreting PAS data is the lack of control the researcher has over the resource and the fact that data go through multiple processes before they are available as an archaeological dataset. For instance, much has been written on the difficulties of interpreting unstratified archaeological assemblages (see Chapter 3, pp. 17–18), yet the relationship between surface scatters of metal finds and stratified archaeological deposits is still poorly understood. This needs further attention if interpretations based on surface material are to become more robust. Further work is also needed to better understand the detecting and reporting process if interpretations based on PAS data are to be placed on a sounder footing, a topic that has seen recent attention from others working with PAS data (Robbins 2012). Of particular significance is the variation in the quality of spatial information provided for PAS records. The case studies have demonstrated the importance of garnering as precise spatial information for finds as possible, and the findspots where locational information was well documented and proved most amenable to interpretation. It is therefore imperative that FLOs continue to impress upon finders the importance of recording precise findspot details, and thus maximizing the data’s value.

Focusing on several extensive geographical areas has meant limiting the number of detailed investigations in each case study. Undoubtedly, an approach focusing on a smaller area would have allowed for detailed analysis at more individual sites and landscapes, contributing further to the understanding of the regional Romano-British settlement patterns. The provisional work undertaken at some localized case studies would benefit from wider literature searches and more detailed consideration of other available archaeological evidence, particularly where aerial photographs may be available for consultation. Whilst this has not been undertaken at all of the sites and landscapes considered in this study, it is hoped that the work undertaken here will form the basis for more detailed work in the future at selected areas, both by the author and others. For practical reasons it was possible to undertake fieldwork at only one of the 391 potential sites identified through the methodology. In order to make the most out of the data available from any PAS findspot, additional fieldwork would

be immensely beneficial. Non-invasive programmes of fieldwork such as geophysical survey might allow morphological features to be recognized, whilst fieldwalking might provide further evidence for the chronology and extent of sites represented by PAS data. Fieldwork at some of the findspots identified as potential sites might reap dividends in the future, and could significantly benefit our understanding of the relationship between surface scatters and stratified deposits.

Selection of individual, smaller areas for study in the future would also allow scope for an assessment of the wider chronological development of sites and landscapes. In this study the focus has been almost exclusively on the Roman period, yet it is clear that across Britain the Roman period was only one phase of development in landscapes that were populated and that have been subject to continuous change since the prehistoric period. Detailed analysis of individual landscapes which systematically incorporated PAS data of all periods, alongside data from other archaeological resources, would allow issues of change, continuity and settlement shift to be explored in ways not attempted in the present work.

As the focus in this study has been on groups of finds, relatively little attention has been paid to individual artefact types. Yet there is undoubtedly scope for considering what local and regional differences in artefact types and styles might reveal about the function and social status of potential sites, or about regional and local identities. Given that artefacts other than coins and brooches are relatively few and far between, these two artefact types provide the most obvious candidates for further research in this area, and coinage recorded by PAS has been the focus of recent research by Walton (2012).

The suggestions above indicate some of the ways that the ideas and results presented in this study could be developed and improved. Whilst there is scope for the future development of these ideas, it is hoped that the methodology and results presented here have provided firm foundations which can be developed and built upon. One of the most important aspects of the development of the adopted methodology is arguably its potential for use and adaptation by others concerned with the interpretation of PAS data. The method allowed recognition of hundreds of sites represented by Roman period data, and by comparing their distributions with that of data supplied by HERs it was possible to establish which of these were likely to represent previously unrecorded evidence for settlement. Adoption of similar methodologies by others would allow exploration of other regions and historical periods, which would undoubtedly allow recognition of additional new sites and evidence for landscape use. Such work would not only be of importance for enhancing our understanding of the archaeology of England and Wales, but would also be of immense benefit for the purposes of archaeological heritage management, thus providing information for archaeologists involved in development control. It is hoped that the methodology and results presented here will enable others to recognize the value of such an approach, and to consider similar methods.

Notes

- 1 These figures were correct on 4 June 2009, when a full dataset of Roman records was downloaded from the PAS database. These figures will rapidly have become out of date, as more artefacts are recorded on the database each day.

Appendix 1

Responses to a Questionnaire Circulated to Metal Detector Users

The primary aim of this research has been to assess the potential value of amateur metal detector finds for enhancing understanding of the past. It was therefore considered important to try to understand the ways in which metal detector users undertake their hobby. Questionnaires were devised which presented respondents with a number of questions on issues including why they chose to detect where they did, what type of artefacts they collected and how they recorded where they found their objects (an example questionnaire is included in Appendix 2). Questionnaires were distributed via Finds Liaison Officers (FLOs) and were returned through the FLOs, the central Portable Antiquities Scheme (PAS) unit or directly.

The questionnaires were of a mixed quantitative and qualitative design, in order to generate statistics regarding the way in which metal detector users operated, and to provide respondents with an opportunity to provide anecdotal evidence on the way that they searched. The questionnaires were anonymous in order to encourage metal detector users to be candid about the way they searched for and reported their finds. Where individual findspots have proven to be of potential significance and have been investigated in more detail, informal interviews have also been carried out where possible. This has been in order to obtain further information from finders regarding other artefacts that have been recovered from the location but not reported, the true extent of the distribution of finds and any other details that might assist interpretation.

However, dialogue with finders has not been possible in every such case, for a number of reasons. In some cases the finder of the material is deceased, in others they are no longer contactable and some did not wish to cooperate with this research. Approval to undertake the questionnaires and informal interviews was granted by King's College London Humanities Research Ethics Panel (application numbers REP-H/07/08-4 and REP-H/08/09-2). The initial intention was to distribute questionnaires in each of the case study regions in order to assess whether there were major regional differences in the way that metal detector users searched for artefacts. However, changes to the regional case studies prevented this. One of the original case study regions, Kent, was replaced by Cumbria after the questionnaires had been circulated, whilst the original region comprising East Yorkshire, North Lincolnshire and North East Lincolnshire was restricted to North Lincolnshire and North East Lincolnshire. Furthermore, widely varying response rates from metal detector users in different regions prevented any meaningful comparison of questionnaires from different areas. The total number of responses to the questionnaires was 65. Although this number is not sufficient for detailed statistical analysis, the results do allow some observations on the behaviour of metal detector users to be made, which have contributed to development of the methodology and interpretation of the data. The results are presented below.

Question 1: In which county/counties do you metal detect regularly?

	North and East Yorkshire	Worcestershire and Warwickshire	Northamptonshire	North Lincolnshire	Total
Single county	22	14	3	3	42
Other counties	5	12	4	2	23
Non-adjacent counties	0	0	1	1	2
Total	27	26	7	5	65

Question 2: What makes you choose where to go metal detecting? (Please tick as many boxes as appropriate)

	North and East Yorkshire	Worcestershire and Warwickshire	Northamptonshire	North Lincolnshire	Total
Where you can get permission	24	23	7	5	59
Close to where you live	16	13	5	2	36
Close to somewhere to park	8	4	2	1	15
Archaeological sites known to you	12	6	5	3	26
There are no archaeological sites that you know of, but you think it might be a likely place for settlement	13	10	7	0	30

Qualitative responses to question 2:

- ‘The enjoyment of walking and detecting on fields in remote areas and finding something that can be recorded on PAS database’
- ‘Evidence of previous occupation’
- ‘Fields known to be good’
- ‘Will try anywhere’
- ‘To enjoy the fields and the local terrain, often hidden from the roads’
- ‘By invitation on friend’s farms, gardens’
- ‘Permission is the biggest stumbling block although would prefer to be near habitation’
- ‘I thought you were not allowed to detect on archaeological sites’
- ‘Research and aerial photographs’
- ‘The location of club rallies’
- ‘That lucky feeling in the belly’
- ‘Beach’
- ‘After research’
- ‘Near water, springs and rivers’
- ‘Club sites and beaches and local knowledge from other club members’
- ‘Time’
- ‘Most isolated site possible’
- ‘Wherever I can get permission’
- ‘Within about a ten mile radius’
- ‘Do not detect on sites’
- ‘Just hoping for chance finds’
- ‘Land free of crops’
- ‘Metal detecting rallies held in area’
- ‘Random searching’

Question 3: How important are the presence of known archaeological sites in helping you choose where to detect? (Please tick the most appropriate)

	North and East Yorkshire	Worcestershire and Warwickshire	Northamptonshire	North Lincolnshire	Total
Very important	6	0	1	0	7
Important	7	8	3	1	19
Not important	14	17	3	4	38
Question unanswered	0	1	0	0	1
Total	27	26	7	5	65

Question 4: Do you undertake research before deciding where to go metal detecting (Please tick?)

	North and East Yorkshire	Worcestershire and Warwickshire	Northamptonshire	North Lincolnshire	Total
Yes	17	14	7	3	41
No	13	11	0	2	26

Question 5: If the answer to the above question is yes, which of these forms of research do you undertake? (Please tick as many boxes as appropriate)

	North and East Yorkshire	Worcestershire and Warwickshire	Northamptonshire	North Lincolnshire	Total
Reading books/magazines on local archaeology	18	15	6	3	42
Use of the county's sites and monuments record (visit or online)	7	5	5	0	17
Research on the internet	13	7	7	2	29
Rely on a friend or club to do your research	10	4	1	2	17
Other research (please specify)	4	6	5	2	17

Qualitative responses to question 5:

- 'Aerial photographs'
- 'Old maps'
- 'Main guide of monuments for the area'
- 'Fieldwalking'
- 'Banging on doors'
- 'Cropmarks and fieldwalking'
- 'Fieldwalking'
- 'OS maps'
- 'Once I have permission, then I research. Local history'
- 'Talking to local people with long family traditions in the area'
- 'Google Earth'
- 'Google Maps sometimes'
- 'Aerial photos, old maps'
- 'Visually reading the landscape'
- 'Research only some areas'
- 'Mainly from general knowledge and some books if time, but not dedicated research'
- 'Farmers' knowledge'
- 'Networking for approachable landowners, sharing knowledge of unapproachable landowners. Have asked PAS for areas where they would like more knowledge available'

Question 6: Which archaeological periods listed in the box below do you collect material from? (Please tick as many boxes as appropriate)

	North and East Yorkshire	Worcestershire and Warwickshire	Northamptonshire	North Lincolnshire	Total
Prehistoric	13	6	2	5	26
Roman	24	23	7	5	59
Anglo-Saxon	18	18	5	5	46
Medieval	22	22	6	5	55
Post-Medieval	18	16	6	4	44
Modern	18	12	2	3	35

Question 7: Besides metal objects, which other types of archaeological artefacts do you pick up when out in the field? (Please tick as many boxes as appropriate)

	North and East Yorkshire	Worcestershire and Warwickshire	Northamptonshire	North Lincolnshire	Total
Pottery	21	22	6	5	54
Bone	5	2	3	1	11
Glass	9	10	6	5	30
Tiles	14	9	3	1	27
Stone	11	12	3	4	30
Other	7	6	4	3	20

Qualitative responses to question 7:

- ‘All artefacts’
- ‘Flint’ (six respondents)
- ‘Flint scrapers’
- ‘Clay pipes’ (two respondents)
- ‘Clinker’
- Not specified (seven respondents)

Question 8: Besides metal objects, which types of archaeological artefacts do you show to your Finds Liaison Officer? (Please tick as many boxes as appropriate)

	North and East Yorkshire	Worcestershire and Warwickshire	Northamptonshire	North Lincolnshire	Total
Pottery	13	17	5	4	39
Bone	4	3	3	0	10
Glass	4	5	5	3	17
Tiles	6	6	3	0	15
Stone	7	6	3	2	18
Other	6	4	2	3	15

Qualitative responses to question 8:

- ‘All’
- ‘Flints’ (three respondents)
- ‘Flint scrapers’
- Not specified (eight respondents)

Question 9: Do you show everything you find to your Finds Liaison Officer? If the answer is no, please say what you leave out

- ‘Post-medieval finds are left out, i.e. 19th and 20th-century finds, although even they will be antique very soon’
- ‘Modern’
- ‘Hammered silver and Roman coins’
- ‘Modern’
- ‘18th, 19th and 20th-century coins’
- ‘Iron pieces and horseshoes’
- ‘Pottery, unless not identified’
- ‘Lead dress’
- ‘Buttons’
- ‘Modern’
- ‘Obviously modern finds’
- ‘Modern – less than 200 years’
- ‘Buttons of last 200 years’
- ‘Anything that is obviously post-medieval’
- ‘Iron’
- ‘Lumps of lead that are not moulded shaped or marked’
- ‘Selective with respect to pottery, tiles etc’
- ‘Self-evidently finds under 200 years old’
- ‘Medieval pottery from a known site’
- ‘Those items experience has shown the FLO regularly rejects, e.g. the majority of buttons’

Question 10: Do you keep records of how much time you have spent searching in particular places? (Please tick)

	North and East Yorkshire	Worcestershire and Warwickshire	Northamptonshire	North Lincolnshire	Total
Yes	5	11	2	1	19
No	23	14	5	4	46

Question 11: Do you keep records of exactly where you have searched? (Please tick)

	North and East Yorkshire	Worcestershire and Warwickshire	Northamptonshire	North Lincolnshire	Total
Yes	15	16	5	3	39
No	12	9	2	2	25

Question 12: Do you make notes about areas where you have not found anything? (Please tick)

	North and East Yorkshire	Worcestershire and Warwickshire	Northamptonshire	North Lincolnshire	Total
Yes	13	7	5	2	27
No	14	16	2	3	35

Question 13: How do you record where you discovered your artefacts? (Please tick)

	North and East Yorkshire	Worcestershire and Warwickshire	Northamptonshire	North Lincolnshire	Total
Map in field	3	5	1	2	11
Map at home	17	12	6	2	37
Map owned by FLO	1	5	0	2	8
GPS	5	2	4	1	12
No formal record	3	7	0	1	11
Other	3	4	0	2	9

Qualitative responses to question 13:

- ‘Computer and GPS’
- ‘Record book’
- ‘Not applicable yet’
- ‘Written record’
- ‘Photo’
- ‘I keep a diary’
- ‘Computer’
- ‘Did use to record where I found things, now I just remember’
- ‘Just remember ourselves’
- ‘Only mental records’
- ‘We mark all our finds’
- ‘Mental knowledge. Some areas where I haven’t found things have produced things at other occasions’
- ‘We know where we’ve found them, just keep mental record’
- ‘Only finds suitable for PAS’
- ‘In a finds notebook’

Question 14: Which best describes the way you go metal detecting? (Please tick as many as appropriate)

	North and East Yorkshire	Worcestershire and Warwickshire	Northamptonshire	North Lincolnshire	Total
You are an independent detector user who searches alone	13	8	3	3	27
You search with another or a small group of friends	12	13	6	4	35
You are a member of a club, but also search your ‘own’ sites	20	18	7	4	49
You are a member of a club and only search on ‘club’ sites	4	4	2	0	10
You only search at metal detector rallies	2	0	0	0	2
You sometimes search at metal detector rallies	11	11	4	1	27
You never search at metal detector rallies	5	7	3	0	15
Other	0	0	1	1	2

Qualitative responses to question 14:

- ‘Beach’
- ‘Sometimes on the local beach’
- ‘Very rarely detect on metal detecting rallies, once or twice a year’
- ‘With landowning friends who have invited me to search on their fields’
- ‘On holiday’
- ‘Mainly search on club digs’
- ‘By word of mouth’

Question 15: If you have any further comments about the way you search for archaeological artefacts, how they are recorded by the Portable Antiquities Scheme, or how you think metal detector finds add to our knowledge of the past then please add them below [the responses here have been included exactly as they were written by the questionnaire respondents, in order not to misinterpret any of the information supplied]:

- ‘I have been detecting at Brantingham for 18 years on the same sites and fields. For all of this time I have recorded all or nearly all have been recorded even before PAS started at Hull and ER museum. Eventually my collection will find its way into the museum for future generations to learn from. At present I volunteer at HERM to identify artefacts from other metal detectorists collections and catalogue them for students to research in the future.’
- ‘It would be good to visit other clubs increase our knowledge.’
- ‘I think it’s important for archaeological research etc.’
- ‘Now that we get to see/meet FLO’s etc I now record with them, whereas a few short years ago I officially recorded nowt.’
- ‘I feel PAS is very important to the way finds are recorded with or without a metal detector, and the way it is conducted I also feel it encourages people to record their finds. Responsible a great deal in discovering new sites and artefacts.’
- ‘Metal detecting picks up metal artefacts that are missed by visual searching: I think the PAS is very important otherwise who would have the time to take finds to local museums.’
- ‘I generally look for military occupation from the last 500 years. I also keep all other items.’
- ‘I bring finds to our club to be recorded by our finds officer and supply info on where finds were found.’
- ‘They enable studies to be made of a particular type of scarce artefact on a county/nationwide basis and with coins the same applies in studying the spread of coinage from Celtic/Saxon times.’
- ‘We bring our finds to monthly meetings to be catalogued by our finds liaison officer.’
- ‘I am new to this “hobby” and haven’t yet made any significant finds.’
- ‘Like many other metal detectorists, I try and get permission wherever possible to detect. Then when I get a field, I go around the boundaries, zig-zag through the centre ... if nothing I go to next field. Looking for “hot spots” – not one off finds. Therefore few fields are ever done carefully. But when I find a good field, bamboo poles and flags come out and I do the whole field thoroughly.’
- ‘I feel PAS is very important to the way finds are recorded with or without a metal detector, and the way it is conducted I also feel it encourages people to record their finds. Responsible metal detectorists who record their finds with PAS contribute to our understanding of the past a great deal in discovering new sites and artefacts.’
- ‘Professionals always say it’s “not in a context” unless its treasure.’
- ‘The work carried out by metal detectorists in and round Norton has significantly added to our knowledge of previous occupation. By ensuring that our finds are recorded with PAS this increased knowledge is available for all to see and enjoy.’
- ‘There are fields that you would not expect to find anything because of historical records, but detectorists have found that some fields turn out to be very important to people like yourself, due to the amount of finds we find in them, which in turn increases all our knowledge of history.’
- ‘I usually fieldwalk first to look for signs of habitat, pottery, building stone, different colours in the soil etc.’
- ‘All finds over 300 years old or any artefact that’s not easily identifiable is shown to FLO. On site searching can be either randomly walked or strip searched, depending on finds that emerge. On local known sites, methodical strip searching and recording of finds by GPS.’
- ‘PAS realistically does not have the capacity to record all items so there is a degree of selectivity on what is actually taken from me to record (e.g. grotty 3rd and 4th century AD coins from known sites).’
- ‘Metal detecting is fieldwalking – e.g. searching with the addition of a metal sensing instrument. The PAS record my finds most satisfactorily. I know that metal detector finds add to knowledge of the past as details of the artefacts are fully recorded in county and via computerization, national archives. NB – many of these items found in my local area of search are passed directly to the local archaeologist who is researching this area’s ancient settlement and ground usage.’
- ‘In my opinion it’s exhilarating locating coins and artefacts and the museums have benefited from our persistence, but all archaeologists don’t appreciate it, a lot have a “dog in a manger attitude”.’
- ‘NN PAST project, working to develop the history of the Norton parish, working alongside village history group. Record artefacts found on village parish maps, and submit all finds to FLO. However, accessing the higher level information PAS database to research the areas finds and print off maps is proving very difficult.’
- ‘I think recording with our FLO and the overall finds rate with the PAS speaks well for the hobby and the increased picture of our past.’

- ‘We take our finds to Scunthorpe to be recorded. We like to think this will help to give a picture of movements of our early ancestors and are pleased we can enjoy our hobby and also be useful in helping the PAS too.’
- ‘I take the view that any field is worth searching because events or habitation in our history on that field may be lost to memory or unrecorded. I believe also that through recording some recent Roman finds to the PAS it will be possible to locate a site searched for in 1957 and missed. I have also been informed that Roman finds (which are still being recorded) from a few years ago are throwing new light on a site now destroyed by a golf course. In general, the PAS is a good scheme which is underfunded. At present I record newer finds at Scunthorpe and finds from a few years ago at Lincoln, both whom have dealt with me at all times in both a friendly and professional manner.’
- ‘The time which PAS retains finds for identification alienates most metal detectorists from recording finds – particularly those new to the hobby who wish to show their find to friends and family. A simple system of photographing finds and submitting photos to FLO with FLO requesting the actual article to be brought in for recording with a limit of one month to be held – longer with explanation/reason – would help to build bridges. The PAS limitation of two weeks for treasure finds to be brought in needs to be extended to at least one month – working people may find that it is impossible to achieve in only a couple of available weekends. Questions which come to mind of a non-archaeologically trained ageing metal detectorist on archaeological issues are not often answered with the depth of knowledge one would anticipate which loses the confidence of the metal detectorist. E.g., “can’t say now it’s out of context” is so dismissive. The pressure for exact findspot within a field brings out the worst responses from some metal detectorists who recognize that items are moved so far by modern machinery. The result is to have some MD participants unmeaningly say wrong field or even site. Provide a few GPS machines would make the most positive difference to hard pressed older enthusiasts with obvious limitations of income. The more GPS machines seen on the field the more questions of what is she/he doing and the more desire for the gadget a much lower priced gadget would also help. Pressure from the Scheme to manufacturers might achieve adequate gadget within reach of the older pocket. A good scheme to encourage MD enthusiasts to report to the local police station to explain a recording by the police of the fields you are working on with permission would help eliminate some of the opposition but it needs to be made acceptable to MDs to do this and willingness of police to involve in recording and using the enforcement. A Scheme to easily identify the owner of land would be invaluable.’
- ‘Detecting clubs in areas where important sites are under threat should be called upon to help local museums/ archaeologist groups, etc. with limited funding – as detectorists search any weather and do not charge fees for their time. Also they find all the small important finds and also use eyes only like fieldwalking – which I have done also for museums. Thanks.’

Appendix 2

Example of a Questionnaire Circulated to Metal Detector Users

The Portable Antiquities Scheme and Roman Britain: the contribution of amateur metal detector finds to understanding the past

I am currently undertaking research into the contribution that metal detector finds can make to our understanding of Roman Britain. My previous experience as a Finds Liaison Officer in Northamptonshire led me to recognise the important contribution that metal detector finds make to understanding the past, both in terms of the discovery of new sites and increased knowledge of previously known sites. The results of this questionnaire will be important in determining how the finds discovered by metal detector users can be interpreted. Many thanks for your assistance.

In which county/counties do you metal detect regularly?	
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What makes you choose where to go metal detecting? (Please tick as many boxes as appropriate)	
Wherever you can get permission	
Close to where you live	
Close to somewhere to park	
There are archaeological sites nearby	
There are no archaeological sites that you know of, but you think it might be a likely place for settlement	
Other reason (please specify)	

How important are the presence of known archaeological sites in helping you choose where to detect? (Please tick the most appropriate)	
Very Important	
Important	
Not Important	

Do you undertake research before deciding where to go metal detecting? (Please tick)	
Yes	No

If the answer to the above question is yes, which of these forms of research do you undertake? (Please tick as many boxes as appropriate)	
Reading books/magazines on local archaeology	
Visits to the county's Sites and Monuments Record	
Research on the Internet	
Rely on a friend or club to do your research	
Other research (please specify)	

Which archaeological periods listed in the box below do you collect material from? (Please tick as many boxes as appropriate)			
Prehistoric		Medieval	

Roman		Post-Medieval	
Anglo-Saxon		Modern	

Besides metal objects, which other types of archaeological artefacts do you pick up when out in the field? (Please tick as many boxes as appropriate)

Pottery		Bone	
Tiles		Stone	

Besides metal objects, which types of archaeological artefacts do you show to your Finds Liaison Officer? (Please tick as many boxes as appropriate)

Pottery		Bone	
Tiles		Stone	

Do you show everything you find to your Finds Liaison Officer? If the answer is no, please say what you leave out.

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Do you keep records of how much time you have spent searching in particular places? (Please tick)

Yes		No	
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Do you keep records of exactly where you have searched? (Please tick)

Yes		No	
-----	--	----	--

Do you make notes about areas where you have not found anything? (Please tick)

Yes		No	
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How do you record where you discovered your artefacts? (Please tick)

With a map in the field?	
With a map at home?	
With a map owned by an FLO?	
With a GPS system in the field?	
You don't	
Other (Please specify)	

Which best describes the way you go metal detecting? (Please tick as many as appropriate)

You are an independent detector user who searches alone	
You search with one other or a small group of friends	
You are a member of a club, but also search on 'your own' sites	
You are a member of a club and only search on 'club sites'	
You only search at metal detector rallies	
You sometimes also search at metal detector rallies	
You never search at metal detector rallies	
Other (please specify)	

If you have any further comments about the way you search for archaeological artefacts, how they are recorded by the Portable Antiquities Scheme, or how you think metal detector finds add to our knowledge of the past then please add them below.

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